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THE

SIMPLEX HANDBOOK

OF

DENTAL MATERIA MEDICA AND THERAPEUTICS

QUESTIONS AND ANSWERS FOR DENTAL STUDENTS

DENTAL SURGERY

By **WESLEY BARRITT,** O.B.E., Ph.C., L.D.S. (Eng.)
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THE

SIMPLEX HANDBOOK OF

DENTAL MATERIA MEDICA AND THERAPEUTICS

A simple tabulated classification of drugs and remedies used in Dental Operations and in the treatment of Dental Diseases

SPECIALLY ADAPTED TO THE REQUIREMENTS OF STUDENTS AND BUSY PRACTITIONERS

BY

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PREFACE TO SECOND EDITION

Various alterations and additions in respect of drugs, chemicals and other matter have been made in this edition. The authors have also considered it advisable to rearrange the tables, which together with the added index will facilitate reference, and it is hoped enhance the value of the work.

This edition was already in the printer's hands when my co-author died with tragic suddenness. Those who knew him will understand that I need ask no pardon for placing on record here not only my deep sense of personal loss as a brother, but also an acknowledgment of my indebtedness to him in connection with this book.

To him were mainly due the initiative and energy which are essential in carrying to completion even so unpretentious a volume as this; and in common fairness, the book cannot be allowed to reach the profession without some mention of the large part he took in its compilation. Under such circumstances, to apply the finishing touches has been no easy task, and I ask the reader's indulgence for any errors or omissions that have escaped notice in checking the final proofs.

A. TEMPLAR BARRITT.

40, Harley Street,
W. 1.
1923.

PREFACE TO FIRST EDITION

The aim of the SIMPLEX HANDBOOK is to provide dental students and busy practitioners with that knowledge of drugs and remedies which is necessary for them either for examination purposes or every day practice.

We have long realised the need of such a book, easy for reference, and free from packing and a superfluity of words and matter that is of no interest, or of only a slight theoretical interest to the dentist.

Many drugs which appear in the Dental Materia Medica text books have been purposely omitted, as too great a choice of remedies leads to confusion, especially where some of these are of doubtful value only.

It is hoped that the alphabetically arranged tables will be appreciated, as the absence of any such attempt at classification in any other book on the subject has always made the acquiring of a useful and practical knowledge of dental Materia Medica exceedingly arduous, if not almost impossible.

The arrangement of the tables leaves ample room in the body of the book for the reader to make his own notes, and thus enhance the value of the handbook.

As far as we are aware, no classification of agents used in dental Histology has ever yet been attempted. The want of such a classification is apparent, and should prove a boon, especially to the student. We

make no apology for introducing this section into the handbook, as the value of a knowledge of dental Histology has recently been demonstrated during research on the nerve supply of the dental tissues.

There can be no question as to the need of such a work as we present under the title of "THE SIMPLEX HANDBOOK OF DENTAL MATERIA MEDICA AND THERAPEUTICS." Whether we have been able to present it satisfactorily we must leave to the dental profession and to those interested in the spread of knowledge amongst the students and members of the profession to decide.

WESLEY BARRITT.
ALFRED BARRITT.

40, HARLEY STREET, W.
July, 1914.

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PART I

MATERIA MEDICA TABLE

DRUGS AND REMEDIES ALPHABETICALLY ARRANGED
UNDER THE NAMES BY WHICH THEY
ARE COMMONLY KNOWN.

MATERIA MEDICA TABLE

ACETONE

Acetonum

Characters . . A colourless, volatile liquid, with a peculiar empyreumatic odour. Miscible with water and alcohol.

Use . . . . As a dehydrant, particularly recommended in root canal treatment before filling with paraffin.
Stimulant as constituent of a paint in periodontal disease.

Description . . Dimethyl-ketone (CH_3-CO-CH_3). Prepared by heating Calcium Acetate.

ACETOZONE

Acetozonum

Characters . . A white powder, which hydrolyses in the presence of moisture. Is decomposed by alkalies and decomposes organic matter. Should be kept dry.

Use . . . . Antiseptic, deodorant. Placed in a tooth cavity and moistened, is recommended as a bleaching agent.

Description . . A mixture of equal parts of benzoyl-acetyl-peroxide and an inert powder.

ACIDS

BENZOIC

Acidum Benzoicum

Characters . . White or slightly yellow scales or needle-shaped crystals.
Aromatic odour and taste. Slightly soluble in alcohol, and in alkaline solutions forms Benzoates.

ACIDS—continued.

Use . . . . Antiseptic.
As a Mouth-wash—2 grs. to 1 oz. (*vide* Sodium Benzoate).
As an Inhalation—5-10 grs. in a pint of of boiling water.

Description . . Obtained from Gum Benzoin by sublimation, and prepared synthetically from Toluene.

BORACIC

Acidum Boracicum
Acidum Boricum

Characters . . White pearly, laminar crystals; odourless and unctuous to the touch—also in white powder.
Readily soluble in hot water (1 in 3), slowly soluble in cold water (1 in 26), but more so in water to which Glycerine (1 in 5) has been added.

Use . . . . Antiseptic and anti-putrefactive.
As a mouth-wash—2 drs. in 8 ozs. water.
As a lotion—saturated solution.
As a dusting powder—pure fine powder.

Description . . A weak acid obtained by the re-action of Sulphuric Acid and Borax. It is also found native.

CARBOLIC, LIQUID (Phenol)

Acidum Carbolicum Liquidum
Acidum Phenicum Liquidum

Characters . . Colourless or slightly pinkish liquid, having a sp. gr. 1·064-1·067 at 60% F. Has an acrid burning taste. Soluble 1 in 5 of water.

Use . . . . Powerful antiseptic, anti-putrefactive and disinfectant. Coagulant and analgesic.

ACIDS*—*continued.

Obtundent to sensitive dentine, caustic to exposed pulps, and relieves continued pain after extraction when applied pure on a pellet of wool to the tooth socket.
As a mouth-wash—2% or 2 drs. in 8 oz.
As a Lotion — 5%, and diluted when used.
As an Ointment—Ung. Ac. Carbolic B.P.

Dose . . . . 1 to 3 minims.

Description . . Carbolic Acid liquefied by the addition of 15% of water.

CHROMIC

Acidum Chromicum

Characters . . Deliquescent, crimson, acicular or columnar crystals without odour. Freely soluble in water. Explodes violently if mixed with Glycerine, Alcohol, Ether. and some other organic substances.

Use . . . . Escharotic. As an application, a 10% solution, in ulcerative stomatitis. In gingivitis and glossitis, a 2-5% solution.
It may also be introduced into the tissues by Ionisation and into Pyorrhœa pockets.
Used in the process of Fixation.

Description . . Produced by the action of Sulphuric Acid on Bichromate of Potash.

FLUORIC

Acidum Hydrofluoricum

Characters . . A colourless liquid, strongly corrosive, giving off a pungent, irritating vapour. Usually stored in gutta percha bottles on account of its action on glass. Freely soluble in water.

ACIDS—continued.

Use . . . . Used for etching porcelain inlays. Should be handled with care.

Description . . Obtained by heating together strong Sulphuric Acid and Calcium Fluoride.

GALLIC

Acidum Gallicum

Characters . . White or pale fawn coloured silky needles.
Odourless and with an astringent taste.
Sparingly soluble in cold water.

Use . . . . Astringent and hæmostatic.

Dose . . . . 2-10 grains in cachets, repeated as required.

Description . . Prepared from Galls, which are excrescences found on the twigs of certain varieties of Oak.

HYDROCHLORIC (Muriatic)

Acidum Hydrochloricum

Characters . . Clear or yellowish, fuming, corrosive liquid.

Use . . . . Laboratory and workroom, also in the preparation of Euchlorine.

Description . . Prepared by the action of Sulphuric Acid on Sodium Chloride. Spirits of Salts is commercial Hydrochloric Acid.

HYDROCHLORIC (Diluted)

Acidum Hydrochloricum Dilutum

Characters . . A colourless liquid with an acid taste.

Use . . . . A solvent of Quinine and other alkaloids.

Dose . . . . 5-20 mins.

Description . . Prepared by diluting 28·44 parts by volume of the strong acid with water to 100 parts.

ACIDS—continued.

LACTIC

Acidum Lacticum

Characters . . A colourless, syrupy liquid, inodourous and with an acid taste. Miscible with water, glycerine and alcohol.

Use . . . . Mild caustic and stimulant. Tartar solvent.
As a Paint—15 mins.—1 oz. Glycerine, in chronic gingivitis. A 75% solution may be injected warm into pyorrhœa pockets.
Used in the process of Decalcification.

Description . . Prepared chiefly by fermentation of Lactose and subsequent purification.

NITRIC

Acidum Nitricum

Characters . . A strongly corrosive, fuming, caustic liquid.

Use . . . . Escharotic in gangrenous stomatitis. Laboratory and Workroom.
Used in the process of Decalcification.

Description . . Prepared by distillation from Nitrate of Potash or Soda with diluted Sulphuric Acid.

OSMIC

Acidum Osmicum

Characters . . A pale yellow crystalline substance giving off an excessively irritating vapour.

Use . . . . A 1 or 2% solution may be injected hypodermically in trigeminal neuralgia.
Used in the process of Fixation.

Dose . . . . 4-10 mins. of sol. hypodermically.

Description . . Osmium tetroxide Os O_4.

ACIDS—continued.

PHENOL-SULPHONIC

Acidum Phenol-sulphonicum

Characters . . A reddish, volatile, viscous liquid. Dissolves readily in Water, Alcohol and Glycerine.

Use . . . . Escharotic, in caries or necrosis of bone, chronic alveolar abscesses, and pyorrhœa alveolaris.
A 3% solution is used as a paint in chronic gingivitis and pyorrhœa.

Description . . Formed by the action of Sulphuric Acid on Carbolic Acid.

PHOSPHORIC (META)

Acidum Phosphoricum Concentratum

Characters . . A colourless liquid of syrupy consistence which has a strongly acid taste.

Use . . . . Used for the liquid portion of Zinc Oxy-phosphate cements.

Description . . HPO_3 is obtained by evaporating orthophosphoric acid.

PHOSPHORIC (DILUTED)

Acidum Phosphoricum Dilutum

Characters . . A colourless liquid with an acid taste.

Use . . . . Nerve tonic.

Dose . . . . 5-20 minims.

Description . . Prepared by diluting 15 parts of Concentrated Phosphoric Acid with Distilled Water to 100 parts.

PICRIC

Acidum Picricum

Characters . . Yellow shining crystals with a bitter taste. Heated rapidly in the open it burns, when confined in a test tube explodes.

ACIDS*—*continued.

Soluble 1-90 of Water and 1-10 of Absolute Alcohol.

Use . . . . Analgesic, antiseptic.
In ulcerative and mercurial stomatitis, it relieves pain and removes ulceration.

Description . . Trinitrophenic Acid, formed by action of fuming Nitric Acid on Phenol and subsequent purification.

SULPHURIC

Acidum Sulphuricum

Characters . . A colourless, heavy, oily liquid without odour. Strongly corrosive.

Use . . . . A 50% solution is used to neutralise the contents of putrescent root canals, for enlarging fine and tortuous canals and for dislodging pulp nodules. Laboratory and workroom.
Diluted (8·27 parts in 100) is used as a solvent of Sulphate of Quinine for internal use, one drop for each grain.

Description . . Produced by the combustion of Sulphur and the oxidation and hydration of the resulting Sulphurous Acid gas by means of nitrous and aqueous vapours.

SULPHURIC, AROMATIC

Acidum Sulphuricum Aromaticum

Characters . . A spirituous solution of brownish colour, having an acid, aromatic taste.

Use . . . . May be used when scaling the teeth, to remove calcareous deposits round the necks and under the gum margin.
As a solvent of Sulphate of Quinine in mixtures (1 drop—1 grain).

Dose . . . . 5-20 minims.

Description . . A 12½% Alcoholic and Aromatic Solution of Sulphuric Acid

ACIDS—continued.

TANNIC

Acidum Tannicum

Characters . . Pale yellow vesicular masses or glistening scales. Strongly astringent taste. Readily soluble in water and alcohol.

Use . . . . Hæmostatic and astringent. As a styptic may be applied in powder form on a pellet of wool. As a spray, mouth wash, paint, or gargle in combination with Glycerine and Alcohol for gingivitis, stomatitis, laryngitis, and pharyngitis (*vide* Glycerine of Tannin).
With Carbolic Acid for hardening softened dentine and devitalised pulps.

Dose . . . . . 2-10 grs. in an aqueous solution.

Description . . Obtained from galls by maceration with Ether.

TRICHLORACETIC

Acidum Trichloraceticum

Characters . . Deliquescent, rhombohedral, coalescent crystals.
Readily soluble in water and alcohol.

Use . . . . Escharotic, antiseptic, astringent and styptic. For application to indolent ulcers and mucous patches a 5-10% solution may be used. A 15% solution forced through a sinus in chronic alveolar abscess and into a stubborn pyorrhœal pocket has a powerful stimulating effect. A 15% solution applied on cotton wool prevents oozing from the gum during the fitting of crowns, pivots or inlays. A 25% solution is used as a Tartar Solvent.

Description . . Prepared by acting on Chloral Hydrate with Nitric Acid in sunlight.

ACRIFLAVINE (FLAVINE)

Acriflavina

Characters . . A reddish brown powder. Soluble in water, and has a powerful yellow staining effect on the tissues.

Use . . . . Analgesic, antiseptic, bactericide. 1 in 1,000 or 2,000 relieves pain and has marked cleansing effect on septic wounds, but healing tends to be slow. 1-1,000 aqueous solution or with Oxide of Zinc is useful in root canal treatment.

Description . . A derivative of benzene, diaminomethyl-acridinium chloride. (Proflavine 3·6 diamino-acridine sulphate has similar properties).

ADRENALIN CHLORIDE, LIQUID

Liquor Adrenalini Chloridi

Characters . . Almost colourless liquid changing to pale brown. Very unstable. Its activity is destroyed by excessive boiling. Artificial and chemically pure substitutes have been introduced under trade names, as Adrenine and Synthetic Suprarenin.

Use . . . . Hæmostatic. Vaso-constrictor, hence its use in local anæsthetics.
Pressure anæsthesia in conjunction with Cocaine.
Cardiac tonic when given intravenously in shock.
Gauze tape is prepared for plugging bleeding sockets.

Dose . . . . Average dose in local anæsthetics, 1 minim.
10 minims intravenously in shock.

Description . . Prepared from the active principle of the suprarenal gland and containing 1 part of Adrenalin Chloride, 5 parts of Chloretone in 1,000 parts of normal saline solution.

ÆTHER

Æther Sulphuricum

Characters . . A colourless, mobile and very volatile liquid with a characteristic odour and sweetish taste. Soluble in alcohol. Highly inflammable.

Use . . . . Cardiac stimulant. General anæsthetic, an ingredient in A.C.E. mixture, *q.v.* Spray for obtunding sensitive dentine and for freezing histological specimens.

Dose . . . . 15 minims. In general anæsthesia about 1 oz.

Description . . Prepared from Alcohol by distillation with Sulphuric Acid.

AGAR-AGAR

Plœaria Lichenoides

Characters . . Has the typical appearance of dried seaweed. Is supplied for convenience in powder form.

Use . . . . A prepared jelly is used as the basis for many culture media for bacteria.

Description . . Malayan name for a seaweed—Plœaria lichenoides.

ALCOHOL, ABSOLUTE

Alcohol Ethylicum

Characters . . A colourless volatile liquid Sp. Gr. ·797-·800. Has a pungent odour and burning taste. Contains 1% of water. Inflammable.

Use . . . . Dehydrant, detergent, antiseptic and styptic. A positive antidote to Phenol. Is used as a hypodermic injection in trigeminal neuralgia.

Description . . Prepared from Rectified Spirit (*q.v.*) by dehydration.

ALUM

Alumen

Characters . . Large, colourless, odourless, octahedral crystals with a sweetish and strongly astringent taste.
Slightly acid.
Soluble 1 in 10 parts of water.

Use . . . . . Astringent. For hardening the mucous membrane of edentulous mouths. Should not be used indefinitely when teeth are present. Styptic and caustic to indolent ulcers.
A plug of wool soaked in Carbolised Resin may be dipped in the powder for plugging obstinately bleeding sockets.
Emetic.
As a mouth-wash—1 dr. in 10 oz. of water, with Glycerine ($\frac{1}{2}$ oz.).

Dose . . . . . As an emetic 1-2 drams.

Description . . A Potassium or Ammonium Sulphate of Aluminium crystallised from aqueous solutions.

ALYPIN

Alypinum

Characters . . A non-hygroscopic, odourless crystalline powder.
Soluble 1 in 1 of water.
Solutions may be boiled without interfering with its action.

Use . . . . . Local anæsthetic in solutions of $\frac{1}{2}$ to 2%.

Description . . Primary Benzoyl-tetramethyldiamino-ethylmethyl Carbinol Monohydrochloride.

AMMONIUM BIFLUORIDE

Ammonium Bifluoridum

Characters . . Colourless crystals soluble in water.

Use . . . . A 2% solution is used as a solvent for calcareous deposits and a tissue stimulant. Inject with a syringe having a platinum point (Dunn), protect tissue against burns. Does not dissolve enamel or cementum.

Description . . Prepared by the interaction of Hydrofluoric Acid and Ammonium Carbonate. Also known as Fluoram.

AMYL NITRITE

Amyl Nitris

Characters . . A yellowish ethereal liquid with a peculiar not disagreeable odour. Deteriorates by exposure to air.

Use . . . . Vaso-motor dilator. As an inhalation from glass capsules in convulsions, syncope and collapse.

Dose . . . . As inhalation 2-5 minims.

Description . . Produced by the action of Nitric or Nitrous Acid on Amyllic Alcohol.

ANTIFEBRIN

Acetanilidum

Characters . . Small white odourless glittering crystals; produces a burning sensation on the tongue. Almost insoluble in cold water. Soluble in spirituous solutions.

Use . . . . Febrifuge, antipyretic, hypnotic, sedative and nerve tonic. Preservative in solutions of peroxide of hydrogen.

Dose . . . . 2-5 grains in cachets or tablets.
Description . . Obtained by the action of Glacial Acetic Acid on Anilin.

ANTIPYRIN

Phenazonum

Characters . . Pearly white crystalline scales or in powder. Has a bitter taste.
Very soluble in water.
Use . . . . Analgesic and febrifuge, in neuralgia and migraine. Has valuable astringent and anodyne properties.
A 10% solution is useful for painting inflamed areas.
A 2% solution as a mouth-wash and gargle has been found to have a lasting anodyne effect.
Dose . . . . 5-10 grains (official dose 3-20 grains).
Description . . Obtained from Phenyl Hydrazine.

APOMORPHINE HYDROCHLORIDE

Apomorphinæ Hydrochloridum

Characters . . Minute pale greyish white acicular crystals, odourless and having a slight bitter taste.
Soluble 1 in 50 of water.
Use . . . . Powerful emetic (*vide* Injection).
Dose . . . . $\frac{1}{20}$-$\frac{1}{4}$ grain. $\frac{1}{25}$-$\frac{1}{6}$ grain hypodermically.
Description . . Obtained by heating Morphine or Codeine in sealed tubes with HCl or $ZnCl_2$.

APOTHESINE

Apothesinum

Characters . . Small white crystals readily soluble in alcohol or water.
Aqueous solutions may be sterilized by boiling.

Use . . . . Local anæsthetic in 1-2% solution. It is claimed that a solution equivalent in anæsthetic power to a given amount of cocaine, is much less toxic and less irritating than the latter.

Dose . . . . ·5 to 1 c.c. of a 1-2% solution by injection.

Description . . The hydrochloride of gamma-diethyl-amino-propyl-cinnamate.

ARGYROL

Argyrol

Characters . . Fine black odourless, glistening hydroscopic scales.
Soluble in water, insoluble in alcohol.
It causes little or no irritation to mucous membrane and possesses deep penetrating powers.

Use . . . . Antiseptic, germicide, astringent. May be used as a lotion ($\frac{1}{2}$ to 1%) for antral and alveolar abscess irrigation.
For stomatitis and gingivitis a 10-50% solution is recommended as a paint, and is specially indicated in the treatment of pyorrhœa alveolaris after instrumentation.

Description . . Contains 30% of Silver combined with a Cereal Protein.
(Similar proprietary preparations in liquid form are obtainable).

ARSENIC

Acidum Arseniosum

Characters . . Heavy white powder, sparingly soluble in cold water, odourless and tasteless. On heating in a glass tube it slowly sublimes into minute crystals.

Use . . . . Escharotic. Devitalises pulp tissue, $\frac{1}{100}$–$\frac{1}{25}$ grain, in form of discs, paste or fibre. As an application to the gums in

periodontal disease in the form of solution (*v.* Fowler's solution).
(Salvarsan—606—is a preparation containing arsenic and is said to be a specific for syphilis. Neosalvarsan incorporated in tooth pastes, etc., has been recommended in the treatment of Pyorrhœa).

Dose . . . . $\frac{1}{60} - \frac{1}{12}$ gr.

Description . . An anhydride obtained by roasting arsenical ore, and purifying by sublimation.

ASPIRIN

Aspirinum

Characters . . Small colourless, odourless, acicular crystals, with an acid taste. Also in white powder.
Slightly soluble in cold water, about 1 in 5 of 90% alcohol.

Use . . . . Analgesic and febrifuge. Gives marked relief in all affections of the fifth nerve, in acute rheumatism, and in cases of Pyorrhœa Alveolaris associated with rheumatism.

Dose . . . . 5-15 grs. in cachets, tablets or suspended in water, after food.

Description . . Acetyl-salicylic Acid.

ATROPINE SULPHATE

Atropinæ Sulphas

Characters . . A white odourless, crystalline powder with a bitter acrid taste.

Use . . . . Used hypodermically for the treatment of Shock and Collapse.
As an antidote for poisoning by certain narcotic drugs.
An antisialagogue, $\frac{1}{100}$ grain given hypodermically one hour before æther, $\frac{1}{100}$ gr.

every 4 or 6 hours until relieved in Mercurial Stomatitis.

Dose . . . . $\frac{1}{200}$-$\frac{1}{100}$ gr. and in tablets of standard strength for hypodermic use.

Description . . Prepared from Atropine—the alkaloid of Belladonna—by the action of Sulphuric Acid.

BALSAM OF PERU

Balsamum Peruvianum

Characters . . A blackish syrupy liquid with an agreeable balsamic odour, and acrid taste. Insoluble in water, soluble in chloroform and alcohol.

Use . . . . Mild antiseptic stimulant. In Pyorrhœa, fill pockets by inserting needle of syringe to the bottom of the pocket. Use once or twice a week, after thorough irrigation.

Description . . A balsam exuded from the trunk of the Pereira tree.

BISMUTH NITRATE

Bismuthi Nitras

Characters . . White odourless crystalline substance decomposed by water forming Bismuth Subnitrate and Nitric Acid.

Use . . . . Stimulant in dento-alveolar sinuses, pyorrhœa pockets and chronic abscess cavities in form of paste 20%.

Description . . Prepared by the action of Nitric Acid on Bismuth.

BISMUTH OXIDE

Bismuthi Oxidum

Characters . . A pale yellowish-white amorphous powder.
Insoluble in water.

Use . . . . Antiseptic. Incorporated with hard paraffin makes an excellent root filling.

Description . . Prepared by the interaction of Bismuth Oxynitrate and Sodium Hydroxide solution at a boiling heat.

BISMUTH SUBNITRATE

Bismuthi Subnitras

Characters . . A heavy white, colourless, crystalline powder.
Insoluble in water or alcohol.

Use . . . . . Sedative and astringent both internally and externally.
Recommended in irritative dyspepsia and gastric ulcer.

Dose . . . . 5-20 grains in cachet or suspended in water.

Description . . Prepared by the action of water on Bismuth Nitrate.

BLACK DRAUGHT

Mistura Sennæ Composita

Characters . . Dark brown liquid with pleasant aromatic odour.

Use . . . . Laxative, purgative, cathartic.

Dose . . . . 1 to 2 ounces.

Description . . A mixture containing Epsom Salts and Senna with flavouring agents.

BORAX

Sodii Biboras

Characters . . Colourless crystals or white powder, inodourous and with a sweetish alkaline taste.

Soluble 1 in 25 of water.

Use . . . . Alkaline and antiseptic. Useful in stomatitis as a mouth-wash 6%.
When sterilising instruments, add 1 dr. to 1 pint of water, to prevent rust.
Used in the laboratory as a flux.

Description . . Found native.
May be prepared by boiling together Boracic Acid and Carbonate of Soda.

BUTYN

Butyn

Characters . . Soluble in distilled water. Does not readily decompose on boiling.

Use . . . . Local anæsthetic, $\frac{1}{6}$ grain with $\frac{1}{1200}$ grain of Adrenalin Chloride.
It is said to be more active than cocaine and equally rapid in effect.
May be used for infiltration anæsthesia and nerve blocking, in a $\frac{1}{2}$ to 1% aqueous solution.
For immediate extirpation of pulp tissue a 50% aqueous solution has given good results.

Description . . Para - amino-benzol - dipropanol - butyl-amino-sulphate.

BROMURAL

Bromural

Characters . . White platelets having a slightly bitter taste.
Soluble in hot water.

Use . . . . Sedative, hypnotic.
One or two tablets may be given to timid, nervous or obstinate patients, half an hour before local anæsthesia.

Dose . . .. . 5 to 10 grains in tablets or cachets.

Description . . Urea Monobromine Isovalerianate.

CAFFEINE CITRATE

Caffeinæ Citras

Characters . . Fine white odourless powder with an acid and somewhat bitter taste. Slightly soluble in water.

Use . . . . Cardiac tonic.
One grain doses in migraine, alone or with Phenacetin.
Should be given with caution as its action on the heart is cumulative.

Dose . . . . $\frac{1}{2}$-5 grains in powder or cachets.

Description . . The Citrate of Caffeine, the alkaloid obtained from the Tea and Coffee plants.

CALCIUM CHLORIDE

Calcii Chloridum

Characters . . White agglutinated masses or in crystals. Very deliquescent, odourless. Freely soluble in water.

Use . . . . Increases the coagulability of the blood in hæmophilia and small persistent hæmorrhages.
Where much bleeding is anticipated, 10 grain doses may be given three times a day for the four days preceding an operation. It is said to be more active when administered, 1 grain in 100 mins. intramuscularly in gluteal region and repeated if necessary in two consecutive 24 hours.

Dose . . . . 5-20 grains.

Description . . Prepared by neutralising Hydrochloric Acid with Calcium Carbonate.

CALCIUM LACTATE

Calcii Lactas

Characters . . Opaque, white, crystalline powder. Soluble in water when freshly prepared.

Use . . . . Recommended in hæmophilia and before operating on patients who bleed unduly, as it increases the coagulability of the blood.
Administration as for Calcium Chloride.

Dose . . . . 3-10 grains.

Description . . Prepared by neutralising Lactic Acid with Calcium Carbonate.

CAMPHOR

Camphora

Characters . . White translucent masses, of a tough consistence and crystalline structure.
Sparingly soluble in water, freely in alcohol.

Use . . . . An ingredient in some preparations for root canal treatment, in Liniments (*q.v.*) for neuralgia and in Camphorated Chalk.
When mixed with many crystalline substances, causes liquefaction and forms useful applications, *e.g.* :
Camphor 4, Phenol 12, Water 1.
Camphor 1, Chloral Hydrate 1.
Camphor 2, Menthol 3.
Camphor 1, Thymol 1.
Camphor 2, Salol 3.
Has been recommended in subcutaneous and intravenous injections in the treatment of Tetanus.

Dose . . . . 2-5 grains.

Description . . A stearoptene obtained from the wood of the Camphor tree.

CAMOMILES

Flores Anthemidis

Characters . . The dried yellow single and double flowers.

Use . . . . Sedative in inflammatory conditions. In acute abscesses may be used as a poultice mixed with crushed Poppy Heads. For rinsing the mouth a decoction should be made and used as hot as possible ($\frac{1}{2}$ oz. Flowers to 10 oz. Water).

Description . . Flowers of the Anthemis Nobilis.

CAPSICUM

Fructus Capsici

Characters . . The dried ripe fruit, deep red in colour, with a hot burning taste.

Use . . . . Rubefacient, in official liquid preparations. Chiefly used as a counter irritant in the form of dental plasters for application to the gum.

Description . . The dried ripe fruit of the capsicum plant.

CARMINE

Carminum

Characters . . Deep red lumps or powder. Soluble in ammoniacal solutions.

Use . . . . For colouring dentifrices. As a histological stain.

Description . . The colouring matter obtained from cochineal.

CHALK, CAMPHORATED

Creta cum Camphora

Characters . . White powder with strong camphoraceous odour.

Use . . . . Tooth powder.

Description . . Flowers of Camphor 1 part, Precipitated Chalk 7 parts.

CHALK, FRENCH

Creta Gallica

Characters . . A smooth white powder or lumps of greyish colour.

Use . . . . Used in the laboratory as a separating powder.

Description . . Found native.

CHALK, PRECIPITATED

Creta Precipitata (Calcii Carbonas)

Characters . . White crystalline powder, odourless and tasteless. Almost insoluble in water.

Use... . . . . Used largely in tooth powders and pastes.
Care should be taken that it is as fine as possible, as its crystalline nature varies considerably.
N.B.—Camphorated Chalk and Carbolic Tooth Powder are said to have an injurious effect on the enamel. This is largely due to the abrasive effect of the chalk or other substance used.

Description . . Prepared by precipitation from solution of Calcium Salts.

CHALK, PREPARED

Creta preparata (Calcii Carbonas)

Characters . . White amorphous powder, odourless and tasteless. Insoluble in water.

Use . . . . Is more suitable than the Precipitated Chalk for use in Tooth Pastes. May be used in powders, but as it does not make a very presentable preparation, a little Carbonate of Magnesia (1 in 6) may be added.
Also used in silver cleaning preparations.

Description . . Native friable Carbonate of Calcium freed from impurities by elutriation.

CHARCOAL, PREPARED

Carbo Animalis

Characters . . Fine black powder, odourless and almost tasteless. Insoluble in water and alcohol.

Use . . . . Used as an ingredient in tooth powders or may be used alone.
N.B.—Vegetable charcoal (Carbo Ligni should on no account be used, because of its crystalline nature).

Description . . The residue of bones which have been exposed to a red heat without the access of air and from which the earthy salts have been removed.

CHEMICAL FOOD

Syrupus Ferri Phosphatis Composita

Characters . . A dark red syrupy liquid, sweet and slightly metallic to the taste.

Use . . . . Tonic specially suitable for children.

Dose . . . . ½ to 2 drs. in water immediately after meals.

Description . . A compound syrup of the Phosphates of Iron, Calcium and Potassium.

CHINOSOL

Chinosol

Characters . . A yellowish crystalline powder. Slight odour, disagreeable taste. Soluble in water.

Use . . . . Powerful antiseptic, disinfectant and deodorant. Used externally as a lotion (1-10) for washing chronic abscesses and sores, but is not recommended for use in the mouth. A weak solution may be used for sterilising instruments.

Description . . Potassium Oxychinoline Sulphonate.

CHLORAL HYDRATE

Chloral Hydras

Characters . . Colourless, transparent crystals. Aromatic penetrating odour, bitterish caustic taste. Freely soluble in water.

Use . . . . Hypnotic.
Combined with Bromide of Potassium is a good sedative in neuralgia.

Dose . . . . 5-20 grs. 10 grs. with 10 grs. of Potass. Brom. in $1\frac{1}{2}$ ozs. of water at bedtime.

Description . . Obtained by the action of Chlorine Gas on Alcohol and the subsequent addition of water.

CHLORAL HYDRATE, BUTYL

Butyl-chloral Hydras

Characters . . White pearly scales, with pungent odour and acrid nauseous taste. Sparingly soluble in water.

Use . . . . An efficacious nerve sedative in facial neuralgia.

Dose . . . . 2-15 grs. in pills or cachets. A 3 gr. dose may be given every two hours until relieved.

Description . . Prepared by acting on Paraldehyde with Chlorine Gas.

CHLORAL CAMPHOR

Chloral Camphora

Characters . . Clear syrupy liquid of peculiar odour and taste.

Use . . . . Anodyne. Useful as an external application in acute inflammation and neuralgia.

Description . . A mixture of equal parts of Chloral Hydrate and Camphor.

CHLORALAMIDE

Chloralamidum

Characters . . Colourless, odourless, shining crystals, with a faintly bitter taste. Slightly soluble in water.

Use . . . . Hypnotic. Is said to have less influence on the heart than Chloral.

Dose . . . . 20-25 grs. in powders or cachets.

Description . . A compound of Chloral Anhydride and Formamide.

CHLORETONE

Chloretonum

Characters . . Light white glistening crystals, with a strong camphoraceous odour and taste. Volatile at ordinary temperatures. Sparingly soluble in water, readily soluble in Alcohol, Glycerine and Clove Oil.

Use . . . . Hypnotic and local anæsthetic, analgesic and anodyne, mild obtundent of sensitive dentine.
Has been found to have marked astringent properties, and may be advantageously used for plugging persistently bleeding tooth sockets.

Dose . . . . 5-20 grns.

Description . . Obtained by the interaction of Chloroform, Acetone and an alkaline Hydroxide.

CHLORODYNE

Chlorodynum

Characters . . Dark syrupy liquid with taste of liquorice and peppermint.

Use . . . . Sedative, narcotic.
Useful in neuralgic pains preventing sleep.

Dose . . . . 5 to 15 drops.

Description . . 10 drops contains Morphia Hyd. $\frac{1}{11}$ grn. Chloroform $\frac{3}{4}$ minim, Acid Hydrocyanic, dil. $\frac{1}{2}$ minim.

CHLOROFORM

Chloroformum

Characters . . Heavy, clear, colourless, mobile and diffusible liquid having a characteristic odour and burning sweet taste.
Sparingly soluble in water, freely soluble in alcohol.

Use . . . . General anæsthetic.
Constituent of many liniments. Solvent of Gutta Percha and Rubber.
Sweetening agent in some liquid dentifrices
An ingredient in A.C.E. mixture, Spirit and Water of Chloroform.

Dose . . . . For anæsthetic purposes about $\frac{1}{2}$ fl. oz.

Description . . Prepared by distillation of Alcohol in the presence of Slaked and Chlorinated Lime.

COBALT, SALTS OF

Cobaltum

Characters . . The more stable salts (cobaltous) are red when hydrated and blue when dehydrated.

Use . . . . Various salts have been used for devitalising pulp tissue; their action is, however, probably due to the arsenic which they contain.
As a constituent in some mummifying preparations, after being freed of arsenic.

COCAINE HYDROCHLORIDE

Cocainæ Hydrochloridum

Characters . . Light, shining, lamellar crystals free from odour and having a slightly bitter taste, leaving a sensation of numbness on the tongue.
Very soluble in water.

Use . . . . Local anæsthetic in solutions of $\frac{1}{2}$-1%. For pressure anæsthesia, a crystal may be used in conjunction with Adrenalin. Used by cataphoresis on sensitive dentine, erosion cavities, etc.

Dose . . . . $\frac{1}{10}$ to $\frac{1}{4}$ grain.

Description . . The hydrochloride of the alkaloid obtained from the leaves of the Coca plant.

COCAINE LACTATE

Cocainæ Lactas

Characters . . Light, shining, lamellar crystals free from odour and having a slightly bitter taste, leaving a sensation of numbness on the tongue.
Very soluble in water.
Decomposed by prolonged heating.
A protoplasm poison.

Use . . . . Local anæsthetic in solutions of $\frac{1}{2}$-1%. For pressure anæsthesia, a crystal may be used in conjunction with Adrenalin. Used by cataphoresis.

Dose . . . . $\frac{1}{10}$ to $\frac{1}{4}$ grain.

Description . . The lactate of the alkaloid Cocaine.

COCOA BUTTER

Oleum Theobromatis

Characters . . A pale yellow fatty solid, having the odour of cocoa, and melting at the body temperature (98·4 F°).

Use . . . . Lubricant. Prevents scratching when used on discs and strips for polishing fillings.

Description . . Obtained by expression and heat from the seeds of the cocoa plant.

COCHINEAL

Coccus Cacti

Characters . . An ash grey granular looking substance, without odour.

Use . . . . Used as a colouring agent when powdered for various forms of dentifrices. (Carmine *q.v.* is the active colouring principle, and is recommended for use in preference to Cochineal).

Description . . The dried fecundated insect, Coccus Cacti, reared on the trees of the Nopalea species.

CODEINE PHOSPHATE

Codeinæ Phosphas

Characters . . White crystalline powder, odourless and of bitter taste.
Soluble 1 part in 4 of water.

Use . . . . Narcotic, sedative, analgesic.
Hypodermic injections, 1 gr. in 6 mins. of water, given to relieve intense pain. The Codeine Salts are less active than the Morphia salts, but freer from after effects.

Dose . . . . . 1-2 grs. in pill, cachet or syrup.

Description . . Obtained by the action of Phosphoric acid on Codeine, an alkaloid of Opium.

COLLODION

Collodium

Characters . . A colourless syrupy liquid, highly inflammable, and having a strong ethereal odour.

Use . . . . As an application to wounds forms a protective covering either alone or in conjunction with gauze dressing.

Description . . A solution of Pyroxylin in Ether and Rectified Spirit.

COLLODION FLEXILE

Collodium Flexile

Characters . . As Collodion, but of a thicker consistence and cracks less readily.

Use . . . . As Collodion, but makes a stronger dressing.
Collodion also serves as a vehicle for various Styptics as Tannic Acid, Antiseptics as Carbolic Acid, and Anodynes as Aconite.

Description . . Collodion to 12 ozs. of which is added Canada Balsam $\frac{1}{2}$ oz. and Castor Oil $\frac{1}{4}$ oz.

COPPER SULPHATE

Cupri Sulphas

Characters . . Deep blue transparent crystals, having a metallic taste.
Freely soluble in water.

Use . . . . Astringent, escharotic, antiseptic, emetic.
A 2 to 4% solution is used in Ionic medication.
Its use is indicated in ulcerative stomatitis, indolent ulcers, pyorrhœa pockets, applied in the form of a stick, in powder, or in concentrated solution on wool.
In actinomycosis irrigations of 1% solutions are recommended, and doses of $\frac{1}{4}$ increasing to 1 gr. may be given thrice daily.

Dose . . . . $\frac{1}{4}$-1 gr.
As an emetic 5-20 grs.

Description . . Prepared by the action of Sulphuric Acid on Copper.

COPPER OXIDE

Cupri Oxidum

Characters . . A heavy dark brown or black powder, insoluble in water and alcohol.

Use . . . . Antiseptic. An ingredient in Oxyphosphate of copper cements.

Description . . Prepared by the oxidation of pure copper.

COTTON WOOL

Gossypium

Characters . . In bulk, rolls, or swabs.
Usually absorbent. Soluble in an ammoniacal solution of Copper Oxide.

Use . . . . As a dressing soaked in various medicaments.

Description . . Hairs of the seeds of Gossypium Barbadense and other species—freed from fatty matter and bleached.

CREAM OF TARTAR

Potassii Tartras Acidus

Characters . . Colourless or slightly opaque rhombic crystals; also in white crystalline, gritty powder.

Use . . . . Used in tooth pastes and mouth washes, to increase the flow of saliva, and in this way is said to render the teeth less liable to caries.

Description . . The purified deposits obtained during vinous fermentation.

CREOSOTE

Creosotum

Characters . . A faintly yellow oily liquid, having a smoky odour and burning taste. Mixes in all proportions with alcohol and glycerine. Sparingly soluble in water.

Use . . . . Deodoriser, antiseptic, antiputrescent, and obtundent.
Mixed with Oxide of Zinc forms a good pulp-cap.

Dose . . . . 1-3 minims.

Description . . A mixture of phenols obtained by distillation of Beech Tar. (That obtained from Coal Tar is more caustic).

CRESOL

Cresol

Characters . . A colourless or straw coloured liquid, having a phenol-like odour and burning caustic taste. Miscible with alcohol and glycerine in all preparations. Slightly soluble in water.

Use . . . . Antiseptic and disinfectant.
Local analgesic or anodyne in root canal dressings.
Useful for cauterizing and stimulating sinuses associated with alveolar abscesses (*vide* also Trikresol).

Description . . Acid Cresylicum obtained from Coal Tar. There are three isomeric Cresols, a mixture of the three forming Trikresol.

DI-IODOFORM

Di-iodoformum

Characters . . Fine yellowish white crystals without odour. Insoluble in water. Soluble in chloroform.

Use . . . . A good substitute for Iodoform.

Description . . Periodide of Ethylene.

EMETINE HYDROCHLORIDE

Emetinæ Hydrochloridum

Characters . . A white crystalline powder having a bitter taste. Freely soluble in water and alcohol.

Use . . . . Emetic. Is said to be a specific in the treatment of Pyorrhœa Alveolaris when endamœba buccalis is the causative agent.

Dose . . . . As an emetic $\frac{1}{12}$ to $\frac{1}{6}$ of a grain by the mouth. A half per cent. solution in normal saline dropped into the gum pockets in periodontal disease.

Description . . By the action of Hydrochloric Acid on Emetine, an alkaloid contained in Ipecacuanha Root.

ERYTHROPHLŒINE SULPHATE

Erythrophlœini Sulphas

Characters . . Yellowish white granular crystals soluble in an equal weight of water.

Use . . . . Local anæsthetic.
Dissolved in Eugenol or mixed with a Zinc Cement has been used with success in the treatment of sensitive cavities, before final filling.

Description . . Sulphate of the alkaloid Erythrophlœine which is obtained from Sassy Bark.

ETHANESAL

Ethanesal

Characters . . A colourless, mobile liquid, with very slight taste and smell.

Use . . . . . General anæsthetic. Is said to be less irritating to the respiratory tract and safer than chloroform or æther. No untoward cardiac effects have been reported, and it may be given with safety in respiratory disturbances.

Description . . Consists of pure æther containing ketones treated with Carbon Dioxide and Ethylene.

ETHYL CHLORIDE

Ethyl Chloridum

Characters . . A gas at ordinary temperature and pressure. When slightly compressed is a colourless mobile liquid with a sweetish, burning taste and an agreeable odour. Highly inflammable.

Use . . . . Local anæsthetic as a spray (mixtures of Methyl and Ethyl Chloride are more volatile). As a general anæsthetic, more specially for children.

Description . . C_2H_5Cl. is prepared by the action of dry Hydrochloric Acid Gas on absolute Alcohol. (Somnoform is a mixture of Ethyl Bromide 1, Ethyl Chloride 12, Methyl Chloride 7).

EUCAINE HYDROCHLORIDE

Benzaminæ Hydrochloridum

Characters . . Odourless, white crystalline powder, having a bitter taste.
Soluble 1-40 of water.

Use . . . . Local anæsthetic in 2-3% solutions alone or in conjunction with Adrenalin Chloride solution.
Slower but safer than Cocaine.
Simple solutions may be boiled without being decomposed.

Dose . . . . 10-20 minims for hypodermic injection.

Description . . The Beta Salts of Eucaine are the ones chiefly used in medicine, they are prepared by the action of an acid corresponding to the salt required on pure Eucaine.
Eucaine (Beta) is Benzoyl-vinyl-diaceton-alkamine.

EUCAINE LACTATE

Benzaminæ Lactas

Characters . . Soluble 1-4 of water.

Use . . . . As Eucaine Hydrochloride, *q.v.*

Description . . Eucaine salts resemble Cocaine both in their chemical and physiological action.

EUCALYPTOL

Eucalyptol

Characters . . A colourless liquid with a camphoraceous odour and pungent cooling taste. Almost insoluble in water. Freely soluble in alcohol.

Use . . . . Ozoniser, rubefacient, and antiseptic. Less irritating than Oil of Eucalyptus. Solvent of Gutta Percha for root canal treatment.

Description . . The active principle of Eucalyptus Oil.

EUCALYPTUS OIL

Oleum Eucalypti

Characters . . A faintly yellowish volatile oil, having an aromatic, camphoraceous odour and pungent, cooling taste.
Insoluble in water. Soluble in alcohol.

Use . . . . *Vide* Eucalyptol which is recommended in preference.

Description . . The essential oil distilled from the fresh leaves of the Eucalyptus Plant.

EUCHLORINE

Euchlorinum

Characters . . A gas of characteristic pungent odour, soluble in water.

Use . . . . Powerful antiseptic, disinfectant and deodoriser. A solution of the gas is strongly recommended as a spray or gargle in diphtheria.

Description . . Euchlorine is not prescribed as such. It is obtained by the addition of Hydrochloric Acid to Chlorate of Potash and allowed to stand a few minutes in a well-corked bottle; water is then added quickly and the bottle well shaken to dissolve the fumes.
Pot. Chlor. grs. 25.
Ac. Hyd. Fort. mins. 10.
Water to 8 ozs.

EUGENOL

Eugenol

Characters . . Thin, pale, yellow liquid, possessing a strongly aromatic clove odour and a pungent spicy taste.
Insoluble in water.
Soluble in alcohol.

Use . . . . Local analgesic, antiseptic, and obtundent. Mixed with Zinc Oxide, makes an excellent pulp-cap.
Preferable to Oil of Cloves.

Description . . An aromatic phenol, the principal constituent of Oil of Cloves to the extent of 85%.

EXTRACT OF BELLADONNA (Green)

Extractum Belladonnæ Viride

Characters . . A dark greenish brown mass of characteristic odour. Miscible with glycerine and oils.

Use . . . . Anodyne and resolvent. As a paint with Glycerine, 50%, in inflammation of lymphatic glands and synovitis.

Description . . Prepared by evaporating the expressed juice of the leaves and young branches of the Belladonna plant. Contains approximately ½% of total alkaloids, of which Atropine *q.v.* is the chief.

EXTRACT OF CASCARA SAGRADA

Extractum Cascaræ Sagradæ

Characters . . A dark brown mass, or desiccated powder, having a characteristic odour.

Use . . . . Tonic laxative, acting chiefly on the large intestine.

Dose . . . . 3-15 grs.

Description . . Prepared by percolation and evaporation from the bark of the Cascara Sagrada tree.

EXTRACT OF CASCARA SAGRADA, LIQUID

Extractum Cascaræ Sagradæ Liquidum

Characters . . A dark brown syrupy liquid with characteristic aromatic and bitter taste.

Use . . . . Tonic laxative useful in habitual constipation. Best prescribed in equal parts with syrup of orange.

Dose . . . . 30-60 minims. In chronic constipation 15 to 20 drops thrice daily in water after meals, gradually decreasing the dose after a week.

Description . . An aqueous extract containing 25% alcohol (90%). Prepared from the bark of the Cascara Sagrada tree.

EXTRACT OF ERGOT, LIQUID

Extractum Ergotæ Liquidum

Characters . . A thick, dark brown liquid, having a heavy disagreeable odour and rancid unpleasant taste.

Use . . . . Hæmostatic. In hæmophilia may be administered a few hours previous to operating.
N.B.—Should not be given in pregnancy.

Dose . . . . ½ to 1 fluid drachm.

Description . . Prepared by digesting Ergot in water and subsequent addition of Alcohol.

EXTRACT OF THYROID GLAND

Extractum Thyroideæ Glandulæ (Thyroideum siccum)

Characters . . A yellowish powder partially soluble in water.

Use . . . . Given in nasal obstruction from adenoids and enlarged tonsils due indirectly to a deficiency of thyroid secretion.

Dose . . . . 2 to 5 grs. in tablets or cachets.

Description . . The healthy thyroid glands of the sheep freed from fat, cleaned, dried and powdered.

FORMALIN OR FORMOL

Liquor Formaldehydum

Characters . . A colourless liquid with a pungent irritating odour.
Miscible with water, glycerine and alcohol in all proportions.

Use . . . . Disinfectant, anti-putrefactive, bactericide. A constituent of putrescent pulp remedies. Less irritating when mixed with Cresol or Phenol. For sterilising instruments 10% should be added to an alkaline solution (Borax 5 grs. to 1 oz.). Is prepared in tablet form with Oil of Peppermint for dissolving in the mouth in stomatitis. As a mouth-wash, 1 in 1,000.

Dose . . . . 1 min.

Description . . Consists of a 40% solution of Formaldehyde.

GAUZE

Characters . . Plain gauze is a white transparent fabric of cotton.

Use . . . . Used as a dressing for wounds.

GAUZES, MEDICATED

Characters . . Transparent cotton fabric, coloured according to the medicament with which plain gauze has been impregnated.

Use . . . . Used as dressings for wounds. for packing sinuses, cystic and abscess cavities, and antra, also to supply efficient drainage when required.

Description . . Bismuth—white—5-10%.
Boric—pink—10%.
Carbolic—white—5-10%.
Iodoform—yellow—10-20%.
Cyanide—pink—3%.

GLUCOSE

Glucosum

Characters . . Clear, odourless, almost colourless thick liquid, resembling liquid honey.
Soluble in water.

Use . . . . The free administration before and after anæsthesia prevents vomiting and acidosis is avoided.

Dose . . . . $\frac{1}{2}$ oz. in a cup of milk or water.

Description . . $C_6H_{12}O_6$. Found uncombined in plants and animals or may be obtained by the hydrolising action of acids on cane sugar, or starch. It is also prepared synthetically.

GLYCERINE

Glycerinum

Characters . . A heavy, syrupy, clear colourless liquid, without odour and having a sweet taste.
Freely soluble in water and alcohol.

Use . . . . Laxative, emollient, preservative. A vehicle for various medicaments as Belladonna, Borax, Iron and Tannin, for use as paints. An excipient in tooth

pastes. As a solvent in solutions of Borax, and Boric Acid, for use as mouth washes.
Valuable as an application for burns by Carbolic Acid, etc.

Dose . . . . 1-2 drachms.

Description . . The sweet principal obtained by the reaction of fats and fixed oils with aqueous fluids.
Is obtained as a by-product in the manufacture of soaps.

GLYCERINE OF BORAX

Glycerinum Boracis

Characters . . A clear, syrupy liquid, colourless and odourless. Sweetish alkaline taste.

Use . . . . Emollient, mild antiseptic. In thrush is applied by means of a swab. As a simple mouth wash in stomatitis, 1 oz. to 8 ozs. water.

Description . . A 1 to 6 solution of Borax in Glycerine and water.

GLYCERINE OF TANNIN

Glycerinum Acidi Tannici

Characters . . A brown, syrupy clear liquid without odour and having a strong astringent taste.

Use . . . . Astringent in stomatitis, laryngitis, pharyngitis, and spongy gums. As a mouth-wash, $\frac{1}{2}$ oz. in 8 ozs. water. As a paint, applied pure with a swab. As a spray, 1 in 8 parts of water.

Description . . A 1 to 4 solution of Tannic Acid in Glycerine.

GRANULES, EFFERVESCENT

Are prepared containing various drugs as Antipyrin, Caffeine, Lithia, Phenace-

tin, Phenacetin with Caffeine, Potassium and Sodium Bromides, Glauber Salts, etc. These are less disagreeable to take than other forms of the various drugs and in many cases are more quickly active.

GUAIACOL

Guaiacol

Characters . . A colourless liquid with a characteristic aromatic odour.

Use . . . . Antiseptic, antipyretic. Indicated in painful rheumatic joint affections.

Dose . . . . 1-5 mins. three times daily in capsules.

Description . . Obtained by the fractional distillation of Wood Creosote.

GUAIACOL CARBONATE (Duotal)

Guaiacol Carbonas

Characters . . A white crystalline powder, inodourous and tasteless.
Insoluble in water.

Use . . . . Intestinal antiseptic. Indicated in rheumatoid arthritis.

Dose . . . . 3-10 grs. increased to 20 grs. thrice daily in cachets.

Description . . Contains theoretically 90% Guaiacol.

GUM ARABIC

Acaciæ Gummi

Characters . . Angular fragments with glistening surfaces, or roundish ovoid tears, colourless or yellowish, clear or opaque.
Slowly soluble in water.

Use . . . . Coagulant, demulcent. Emulsifying agent in various preparations. Largely employed in medicated pastilles.

Description . . A gummy exudation from the stem and branches of the Acacia plant.

GUM TRAGACANTH

Tragacantha

Characters . . White flaky pieces and in white powder; sparingly soluble in water, but swells up into a gelatinous mass.
Odourless and tasteless.

Use . . . . Largely used in pharmacy as Mucilage of Tragacanth (6 grs. 1 oz. water) for suspending heavy insoluble powders in mixtures.
Used for its adhesive property to retain temporary plates in position.

Description . . A gummy exudation obtained by making incisions into the stem of the Tragacanth tree.

GUTTA PERCHA

Gutta Percha

Characters . . Sticks and cakes of varying size and colour, usually white or pink. Insoluble in water and alcohol, soluble in chloroform, turpentine and benzol.
Readily softens by the application of heat.

Use . . . . Temporary filling, points are prepared for root canals. Chloro-Percha for root filling is a solution of Gutta Percha in Chloroform. For fixing bridge-work Gutta Percha, preferably the pink, should be warmed together with the bridge on a gold annealer. Also used in the taking of impressions where undercuts are troublesome.

Description . . The milky concrete juice of several trees of the Nat. Ord. Sapotaceæ.

HONEY AND BORAX.

Mel Boracis

Characters . . A honey-like thick liquid.

Use . . . . For stomatitis or thrush in children a little may be used on a swab or be allowed to dissolve in the mouth.

Description . . 1 part to $8\frac{1}{2}$ parts of a mixture of Glycerine and Honey.

INJECTION OF APOMORPHINE (HYPODERMIC)

Injectio Apomorphinæ

Characters . . A colourless, odourless liquid, with a slightly bitter taste.
Does not keep well.

Use . . . . The most powerful and certain emetic.

Dose . . . . 2-8 minims hypodermically.

Description . . 2 grs. of Apomorphine Hydrochloride in 100 minims of Camphor Water.

INJECTION OF COCAINE

Injectio Cocainæ Hydrochloridi *vel* Lactatis (Dentalis)

Characters . . Simple solutions are colourless and without odour. Compound solutions have the characteristic odour of the added drug.

Use . . . . Local anæsthetic.
The usual strength is from $\frac{3}{4}$ to 1% (*vide* also Cocaine).

Dose . . . . About 10 to 30 minims.

Description . . Solutions of varying strength in normal saline, alone or in conjunction with Adrenalin and antiseptics. (The British Pharmacopœia Injection is approximately 10%).

INJECTION OF EUCAINE

Injectio Eucainæ Hydrochloridi *vel* Lactatis (Dentalis).

Characters . . As injection of Cocaine.
May be boiled without decomposing.

Use . . . . Local anæsthetic in solution of about 2%. Slower in action than Cocaine,

but safer—does not produce exhemia by the contraction of the blood vessels.

Dose . . . . 10-30 minims.

Description . . Solutions of Eucaine (Beta), Hydrochloride or Lactate in normal saline or in conjunction with Adrenalin and antiseptics.

INJECTION OF MORPHINE (HYPODERMIC)

Injectio Morphinæ Hypodermica

Characters . . A clear, colourless, odourless solution.

Use . . . . Hypnotic, narcotic, analgesic.

Dose . . . . 1-5 minims.

Description . . Contains 1 grain of Tartrate of Morphia in 22 minims of distilled water.

IODINE

Iodum

Characters . . Occurs in heavy, bluish black, friable crystals, having a metallic lustre, peculiar odour, and a sharp acrid taste.
Volatile and on heating gives off a violet vapour.
Sparingly soluble in water (1 in 5,000), 1 in 10 of 90% alcohol, and freely in a solution of Potassium Iodide. Destructive to most metal instruments, therefore it should be used with wooden points or aluminium tweezers.

Use . . . . Strong antiseptic.
Powerful and penetrating irritant. (*Vide* Tinctures of).
The Iodides of Potassium and Sodium are the more common salts.
Preparations, for prolonged internal administration, are prepared with Albumen, Proteid and Lecithin. These organic compounds are more readily absorbed and less liable to produce

Iodism; their action is said to be continuous and regular in character.

Dose . . . . $\frac{1}{10}$ grain.

Description . . A non-metallic element obtained chiefly from the ashes of seaweed, from the mother liquors of Chilian nitre and from the saline constituents of certain mineral springs in Java and other parts of the Dutch East Indies.

IODOFORM

Iodoformum

Characters . . Small lemon-yellow, hexagonal crystals and in fine yellow powder.
Peculiar, very penetrating and persistent odour.
Sparingly soluble in water and alcohol. Miscible with fixed and volatile oils, and with glycerine.

Use . . . . Antiseptic and slight sedative. Used for the treatment of septic root canals. As an emulsion (1 part in 10 of glycerine) for injecting into septic cavities and sinuses. Its disagreeable odour, however, does not allow of its free use.

Description . . A product of the action of Iodine on a mixture of Alcohol and a solution of Carbonate of Potassium.

IODOL

Iodol

Characters . . A micro-crystalline brownish white powder containing 90% Iodine.
Insoluble in water, soluble 1 in 34 glycerine. Has no unpleasant smell.

Use . . . . Antiseptic, but has no anæsthetic tonic action like Iodoform. Its application to wounds is painless.
May be used emulsified with glycerine

(1 in 10) in septic cavities and sinuses in place of Iodoform.

Description . . Iodol is chemically Tetraiodopyrrol (C_4I_4NH).

KAOLIN

Kaolinum Preparatum

Characters . . A pearly white powder, unctuous to the touch and freed largely of its grittiness. Odourless and insoluble.

Use. . . . . Absorbent and allays irritation. An ingredient in some skin dusting powders, and of porcelain body. Is official in the U.S. Pharmacopœia for making Cataplasms.

Used hot as a poultice when mixed into a paste with oil or glycerine, for application in painful inflammatory conditions about the neck and jaws.

Description . . China clay, a native of Aluminium Silicate derived from the decomposition of the Felspar of granite rocks, powdered and freed of gritty particles by elutriation.

LAUDANUM

Tinctura Opii

Characters . . A dark brown spirituous liquid, having the peculiar narcotic odour of Opium and a bitter taste.

Use . . . . Sedative, narcotic, analgesic. Should only be used in dental pains where other simple remedies have failed. Has little effect as an application. A popular mouth-wash (sedative and astringent) to produce local sedation of sensory nerves and contraction of vessels in hyperæmia is :—

Tinct. Opii ʒi ; Liq. Plumbi Subacet. dil. ʒx.

Dose . . . . 10-30 minims.

Description . . Prepared by macerating Opium in alcohol and water. Contains ·75% of Morphine.

LEAD LOTION

Liquor Plumbi Subacetatis dilutus

Characters . . A clear colourless liquid without odour. A deposit of Carbonate of Lead forms if left exposed to the air.

Use . . . . Astringent and sedative. As a lotion may be applied on lint in most inflammatory conditions.

Description . . A ·3% solution of Subacetate of Lead.

LEECH

Hirudo

Use . . . . Used in blood-letting. When used for local depletion in the mouth should be applied by means of a leech glass.

Description . . Modified annelids or ringed worms adapted to a special method of life.

LINIMENT OF ACONITE

Linimentum Aconiti

Characters . . A clear brown liquid with a spirituous odour of camphor. Miscible with oils and other liniments.

Use . . . . Anodyne. As an external liniment in facial neuralgia. May be used alone, or in combination with Menthol, Liniment of Camphor, Liniment of Soap, etc. Causes a sensation of tingling and subsequent numbness of the part.

Description . . Prepared by maceration and percolation of Aconite root with Alcohol, about 1 in $1\frac{1}{2}$, to which Camphor has been added.

LINIMENT OF BELLADONNA

Linimentum Belladonnæ

Characters . . A clear brown liquid with a spirituous odour of camphor. Miscible with oils and other liniments.

Use . . . . Is a topical sedative for neuralgia; as an external liniment may be used alone or in combination with Menthol, Liniments of Camphor, Soap, etc.

Description . . Prepared by maceration and percolation of Belladonna root with Alcohol in which Camphor has been dissolved.

LINIMENT OF CAMPHOR (CAMPHORATED OIL)

Linimentum Camphoræ

Characters . . A pale straw coloured oily preparation with the characteristic odour of camphor. Miscible with most other liniments.

Use . . . . Rubefacient and stimulant; is useful as a milder form of liniment in neuralgia. May be used with drugs as Menthol, or mixed to the extent of 50-75% with stronger liniments.

Description . . A 1-4 solution of Camphor in Olive Oil.

LINIMENT OF CHLOROFORM

Linimentum Chloroformi

Characters . . A straw coloured oily liquid with the characteristic odours of camphor and chloroform.

Use . . . . A counter irritant in neuralgia. Mixed (25 to 50%) with other liniments the chloroform aids their absorption.

Description . . A mixture of equal parts of Chloroform and Liniment of Camphor.

LINIMENT OF MENTHOL

Linimentum Mentholi

Characters . . A pale yellow oily liquid with the characteristic odours of menthol and chloroform.

Use . . . . Rubefacient, used as an external application in neuralgia.

Description . . Contains 20% Menthol with 25% Chloroform in Olive Oil.

LINIMENT OF POTASSIUM IODIDE WITH SOAP

Linimentum Potassii Iodidi cum Sapone

Characters . . A white creamy saponaceous paste, having the characteristic odour of lemon oil with which it is flavoured.

Use . . . . . Resolvent. May be used as a liniment in inflammatory conditions of lymphatic glands, and joint affections.

Description . . 1 in 10 of Potassium Iodide.

LINIMENT OF SOAP

Linimentum Saponis

Characters . . A pale straw coloured liquid with camphoraceous odour.

Use . . . . A simple external application for use in neuralgia and rheumatic affections of the temporo-mandibular joint. May be used alone as a stimulant or mixed with varying quantities of the more powerful liniments as a diluent.

Description . . A spirituous solution of Hard Soap, Camphor and Oil of Rosemary.

LINSEED MEAL

Farina Lini

Characters . . A brown mealy powder with a characteristic oily smell.

Use . . . . Exceedingly useful for poulticing deep-seated inflammations.

Description . . The crushed seeds of the Flax plant, in which the oil has been retained.

LITHIUM CITRATE

Lithii Citras

Characters . . A white crystalline powder, with a cool, slightly alkaline taste.
Soluble in water.

Use . . . . Diuretic; given in gouty affections with a view to increasing the alkalinity of the blood and acting as a solvent of the Sodium Bi-urate deposits. It has for this reason been extensively used in the treatment of Pyorrhœa Alveolaris, and Osteo-Arthritis; its efficiency, however, is doubtful.

Dose . . . . 5-30 grains.

Description . . Prepared by the action of Citric Acid on Carbonate of Lithia.

LITHIUM SALICYLATE

Lithii Salicylas

Characters . . A deliquescent whitish powder, faintly acid and with a sweetish taste.
Soluble 4 in 3 of water.

Use . . . . Preferable to Sodium Salicylate in cases of chronic articular rheumatism.

Dose . . . . 10-30 grains.

Description . . Prepared by the action of Salicylic Acid on Carbonate of Lithia.

LITMUS PAPER

Characters . . Usually in red and blue strips, and made up into books.

Use . . . . For testing the acidity or alkalinity of the saliva; the red turning blue when

alkalinity predominates, the blue turning red when an acid condition is present.

Description . . Unsized white paper steeped in a solution of Litmus produces the blue paper. The red is prepared by the addition of a minute quantity of acid.

LYSOL

Liquor Cresolis Saponatus

Characters . . A brown, oily liquid, miscible with water, and having the characteristic odour of Cresols.

Use . . . . Antiseptic, disinfectant and bactericide. Useful for sterilising instruments, a 2% solution being used; is recommended as a mouth wash (1%) after the extraction of septic roots.
Applied pure, on a pellet of wool, to painful and septic sockets it gives great relief.

Description . . A solution in neutral soap of Tar Oils, which distil at 187° and 200° C., and which are present in the finished preparation to the extent of about 47%.

MAGNESIA CALCINED

(a) Light

Magnesia Levis

Characters . . A white inodourous powder possessing a faintly alkaline taste.
Should be kept in well-closed bottles.

Use . . . . Antacid, for which property it is used in tooth powders.
The light is used as a diluent to heavy powders.

Description . . Oxide of Magnesium. Prepared from Carbonate of Magnesia by calcination.

(b) Heavy

Magnesia Ponderosa

Characters . . A white inodourous powder possessing a faintly alkaline taste.
Should be kept in well-closed bottles.

Use . . . . Antacid, for which property it is used in tooth powders.

Description . . Oxide of Magnesium. Prepared from Carbonate of Magnesia by calcination.

MAGNESIA CARBONATE

(a) Light

Magnesiæ Carbonas Levis

Characters . . A white inodourous powder with a faintly alkaline taste.

Use . . . . Antacid, used in tooth powders; the carbonates being the most suitable magnesia salts for this purpose. The light is used as a diluent to heavy powders.

Description . . Prepared from solutions of Sulphate of Magnesia and Carbonate of Soda, the strength of the solution determining whether the resulting Carbonate be heavy or light.

(b) Heavy

Magnesiæ Carbonas Ponderosa

Characters . . A white inodourous powder with a faintly alkaline taste.

Use . . . . Antacid, used in tooth powders; the carbonates being the most suitable magnesia salts for this purpose.

Description . . Prepared from solutions of Sulphate of Magnesia and Carbonate of Soda, the strength of the solution determining whether the resulting Carbonate be heavy or light.

MAGNESIA, MILK OF

Liquor Magnesiæ Hydroxidi, Emulsio Magnesiæ B.P.C.

Characters . . A white creamy fluid with little taste. Its alkalinity is due to the Hydroxide of Magnesia which it contains.

Use . . . . Antacid. May be used, diluted, to rinse the mouth; undiluted, it may be held in the mouth to counteract excessive acidity.

Dose . . . . 2 fluid drachms.

Description . . Prepared from a solution of Magnesium Sulphate by the action of Potassium Hydroxide, subsequent washings being made until they are free from any saline taste.

MAGNESIA PEROXIDE

Magnesii Peroxidum

Characters . . White, light, non-hygroscopic powder, insoluble in water and alcohol.

Use . . . . Used in tooth powders where free oxygen is desired. Such powders are especially serviceable where much tartar forms and discolouration rapidly takes place.

Description . . MgO_2. Formed by the interaction of Light Oxide of Magnesia 1 part, and Water 15 parts.
Contains about 10% available oxygen, which is evolved when coming into contact with acid.

MASTICH

Mastiche

Characters . . Small irregular pale yellow tears, brittle and usually transparent.
Insoluble in water.
Soluble 2 in 1 of ether or chloroform.

Use . . . . Dissolved in ether or chloroform, and medicated may be used as a temporary stopping with a pellet of wool.

Description . . A concrete resinous exudation obtained by making incisions in the bark of the stem and large branches of the Mastich tree.

MENTHOL

Menthol

Characters . . Colourless, acicular or prismatic crystals having a strong peppermint odour.
Sparingly soluble in water.
Freely soluble in alcohol, ether or chloroform.

Use . . . . Obtundent, antiseptic, local analgesic. 3 parts rubbed down with 2 parts of Camphor form a liquid suitable for application to the gums.

Dose . . . . $\frac{1}{2}$-2 grains.

Description . . A stearoptene obtained by cooling the oil distilled from varieties of Peppermint herb.

MERCURIC POTASSIC IODIDE

Hydrargyri et Potassii Iodidum

Characters . . Reddish yellow acicular crystals, freely soluble in water. Odourless.

Use . . . . Antiseptic and bactericide. Is a useful antiseptic for the hands when operating and preferable for this purpose to the Perchloride of Mercury. Tablets of convenient size are obtainable and are recommended in preference to the salt.

Description . . Obtained by the mixing together of solutions of Mercuric Chloride and Potassium Iodide in constant proportions.

MERCUROCHROME—220 SOLUBLE

Mercurochrome—220 sol.

Characters . . A dark powder freely soluble in water forming a reddish liquid.

Use . . . . A strong and rapidly acting germicide which penetrates the tissues readily. A 1% aqueous solution may be applied to septic oral wounds. A 1 in 1,000-2,000 solution may be used as a mouth wash. Though no systemic effects have been observed following its local application in the human being, its indiscriminate use is inadvisable.

Description . . The disodium salt of dibromo oxymercury fluorescin, containing 23 to 24% of mercury.

MERCURY PERCHLORIDE

Mercuric Chloride, Corrosive Sublimate

Hydrargyri Perchloridum

Characters . . Heavy, colourless, rhombic crystals, or crystalline masses, or a heavy white crystalline powder. Odourless.
Soluble 1 in 16 water, 1 in 3 alcohol.
Has a destructive action on metal instruments.
An exceedingly powerful poison and should only be used with the greatest caution.

Use . . . . A powerful antiseptic, bactericide and disinfectant. In syphilitic affections it may, with proper caution, be prescribed as a mouth-wash, 1 gr. in 4 oz. of water (1 in 2,000). Is obtainable in tablets of standard strength which are preferable to the salt itself for use in the surgery. Is prescribed with Iodide of Potassium for internal use in syphilis, but is then

more rapidly eliminated. An alcoholic solution of 1 in 500 may be used for sterilising infected dentine.

Dose . . . . $\frac{1}{32}$-$\frac{1}{16}$ grain.

Description . . $HgCl_2$.
Prepared by sublimation from Persulphate of Mercury and Chloride of Sodium.

MERCURY SUBCHLORIDE

Mercurous Chloride, Calomel

Hydrargyri Subchloridum

Characters . . A heavy, whitish, odourless, tasteless, impalpable powder. Should be kept in a dark bottle.
Insoluble in all ordinary liquids.

Use . . . . . Alterative, antiseptic, stimulant. May be advantageously applied to indolent ulcers. As a lotion for syphilitic sores 3 grs. to 1 oz. of Lime Water forms "Black Wash."
Used largely in medicine as a purgative, followed by Epsom Salts or Black Draught.

Dose . . . . 1 to 5 grains.

Description . . HgCl.
Prepared by sublimation from Sulphate of Mercury and Sodium Chloride.

MONOCHLOROPHENOL (Para)

Para-monochlorophenol

Characters . . Small, white crystals.
Insoluble in water.
Soluble in alcohol, ether and glycerine.

Use . . . . . Antiseptic and bactericide.
May be applied with care to pyorrhœa pockets.

Description . . Prepared by the action of Chlorine on Phenol.

NITROUS OXIDE GAS

Nitrogenii Monoxidum

Characters . . A colourless, odourless gas with a somewhat sweetish taste.

Use . . . . General anæsthetic and analgesic, alone or with oxygen.

Description . . N_2O.
Prepared by heating solid Ammonium Nitrate.

NEUROCAINE

Neurocaina

Characters . . White pellets of Cocaine $\frac{1}{8}$in. long and $\frac{1}{20}$in. diameter, very soluble in water.

Use . . . . In the removal of pulp by pressure anæsthesia it is specially indicated.

Description . . Hydrochloride of Cocaine.

NOVOCAIN

Novocainæ Hydrochloridum

Characters . . Colourless needle-shaped crystals, soluble in water.
Aqueous solutions do not decompose on boiling.

Use . . . . Local anæsthetic, employed with Adrenalin gives satisfactory results.
Is best employed in tablet or ampoule form.
Far less toxic than Cocaine.

Description . . Para-aminobenzoyldiethylaminoethanol hydrochloride.
(Many local anæsthetics having a similar chemical formula are in use).

OIL OF ANISEED

Oleum Anisi

Characters . . At 60° F. is a colourless liquid with a pleasant aromatic odour and very sweet taste.
Freezes below 59°F.
Insoluble in water.
Soluble in alcohol.

Use . . . . As a flavouring agent is an ingredient in many dentifrices chiefly in liquid preparations in combination with peppermint.
A cloudy solution is formed when such dentifrices are diluted with water.

Description . . Distilled from the Anise fruit.

OIL OF CAJUPUT

Oleum Cajuputi

Characters . . A transparent bluish green, thin, oily liquid, with an agreeable odour and pungent camphoraceous taste.

Use . . . . Antiseptic and local analgesic. Useful for sterilising septic root canals and obtunding sensitive dentine. May be added in small quantities to Camphorated Oil for use as a liniment in neuralgic and rheumatic affections.

Description . . Distilled from the leaves of the Cajuput plant.

OIL OF CAMOMILE

Oleum Anthemidis

Characters . . A light blue oily liquid of aromatic odour and balmy taste.

Use . . . . Antiseptic, but too irritating for general use. Obtundent.
Diluted with Olive or Camphorated Oil (1 in 10) makes a good liniment.

Description . . Distilled from dried Camomile flowers.

OIL OF CASSIA

Oleum Cassiæ

Characters . . A brownish liquid, becoming dark with age. Has a sweetish, spicy, burning taste.
Soluble in alcohol.

Use . . . . Aromatic and antiseptic. Has similar properties to Oil of Cinnamon, for which it is often substituted. Obtundent to sensitive dentine. Used in dentifrices and toothache remedies. Inferior in flavour to Oil of Cinnamon.

Description . . Distilled from the Cassia bark.

OIL OF CASTOR (Castor Oil)

Oleum Ricini

Characters . . A colourless or pale yellow, almost odourless, thick viscid fluid; mild, but somewhat nauseous to taste.
Soluble in alcohol.

Use . . . . A mild and speedy cathartic—the safest for children.
Mistura Olei Ricini is an emulsion flavoured with cinnamon and orange flower to disguise the taste of the pure oil.

Dose . . . . $\frac{1}{2}$ to 1 oz. Mist. Ol. Ricini 1 to 2 ozs.

Description . . The oil expressed from the seeds of the Castor Oil plant.

OIL OF CINNAMON

Oleum Cinnamomi

Characters . . A light yellow liquid with a delicate aromatic odour and a spicy, sweet, burning taste. Darkens by exposure to light and air.
Soluble in alcohol.

Use . . . . Antiseptic, aromatic, obtundent. Used in dentifrices and toothache remedies.

Description . . Distilled from Cinnamon bark.

OIL OF CLOVES

Oleum Caryophylli

Characters . . A thin, pale yellow volatile oil, with the characteristic odour and pungent taste of cloves.
Soluble in alcohol.

Use . . . . Local analgesic, aromatic, antiseptic and obtundent. An ingredient in dentifrices and toothache remedies.
(*Vide* Eugenol).

Description . . Distilled from the unexpanded flower buds of the Clove plant.
Contains 80% Eugenol.

OIL OF GERANIUM

Oleum Geranii

Characters . . A pale yellowish oily liquid with a powerful rosaceous odour.
Soluble in alcohol and oils.

Use . . . . Flavouring for dentifrices (2 or 3 drops to the oz.). More frequently used than the much more expensive Oil of Rose (Otto) *q.v.*, but has not so delicate a flavour.

Description . . Distilled from Rose Geranium petals.

OIL OF LAVENDER

Oleum Lavandulæ

Characters . . A pale yellow or greenish yellow oily liquid, having a pleasant characteristic odour and an aromatic and somewhat bitter taste.
Soluble in alcohol.

Use . . . . Flavouring agent used frequently in combination with Rose Oil.

Description . . Distilled from Lavender flowers.

OIL OF LINSEED (Linseed Oil)

Oleum Lini

Characters . . A pale yellow oil with characteristic odour. Becomes oxidised on exposure to air.
Miscible with chloroform and turpentine.

Use . . . . An ingredient in Carron Oil, one of the best applications to burns or scalds. It is prepared by shaking together equal parts of Limewater and Linseed Oil. 1% of Carbolic Acid may be added.

Description . . Expressed from the seeds of the common Flax.

OIL OF NUTMEG

Oleum Myristicæ

Characters . . A colourless or pale yellow mobile liquid with a characteristic odour and spicy taste.
Soluble in alcohol and miscible with fixed oils.

Use . . . . Flavouring agent. Is an ingredient in Sal Volatile.

Description . . The volatile oil distilled from Nutmegs.

OIL OF OLIVES (Olive Oil)

Oleum Olivæ

Characters . . A clear pale yellow or light greenish-yellow oily fluid with a faint characteristic odour and bland oily taste.

Use . . . . Emollient, demulcent, nutritive and laxative. Given in cases of corrosive poisoning. Useful as an application to scalds and burns. Used in the preparation of Liniment of Camphor (*q.v.*) and various ointments and plasters.

Dose . . . . $\frac{1}{2}$-1 fluid oz.

Description . . The fixed oil expressed from ripe Olives.

OIL OF PEPPERMINT

Oleum Menthæ Piperitæ

Characters . . A clear, colourless or pale yellow or greenish-yellow oily liquid having a peculiar refreshing odour and characteristic taste.
Soluble in alcohol.

Use . . . . Antiseptic and flavouring agent.
Is used for the official preparations—Peppermint Spirit and Water. Its chief use is for flavouring dentifrices (5 or 6 drops to the oz.), and it leaves a cool refreshing sensation in the mouth. Is recommended in conjunction with an equal quantity of Aniseed Oil.
Aromatic, stimulant and carminative.

Dose . . . . $\frac{1}{2}$-3 minims.

Description . . The volatile oil distilled from the fresh flowering Peppermint herb. Its chief constituent is Menthol.

OIL OF PINE

Oleum Pini

Characters . . A colourless or pale yellow limpid oily liquid having an agreeable characteristic odour.

Use . . . . Antiseptic and disinfectant.
Description . . Distilled from the fresh Pine leaves.

OIL OF ROSES (Otto of Roses)

Oleum Rosæ

Characters . . A pale yellow oily liquid at a temperature of 30°C., whilst at 18° - 21°C. it exists as shining acicular crystals or glistening crystalline laminæ, and when further cooled the oil sets to a semi-solid crystalline mass.
Soluble in alcohol and oils.
Has a powerful rosaceous odour.

Use . . . . As a flavouring agent in dentifrices 1 drop to the oz. is recommended.

Description . . Distilled from the fresh flowers of the Damask Rose and occasionally from other species.

OIL OF TURPENTINE, RECTIFIED

Oleum Terebinthinæ Rectificatum

Characters . . A thin, volatile, colourless liquid, highly inflammable and of a characteristic odour and taste.

Use . . . . Antiseptic, stimulant, hæmostatic, rubefacient. Has been successfully used to check obstinate hæmorrhage of the gums. Useful as a plug in bleeding sockets.
As a liniment (Lin. Tereb. B.P.) in joint and rheumatic affections.

Description . . Obtained by distillation from the oleoresin of various species of Pinus.

OIL OF WINTERGREEN

Oleum Gaultheriæ

Characters . . A colourless or yellow liquid with a strong characteristic odour and sweetish

aromatic and pungent taste.
Soluble in alcohol, ether, and chloroform.

Use . . . . Antiseptic and flavouring agent for dentifrices, 1 or 2 drops to the oz., alone or with Menthol and Oil of Eucalyptus. It may be used mixed with an equal part of Camphorated Oil as an application in facial neuralgia, though Methyl Salicylate which is artificial Oil of Wintergreen is preferable.

Description . . Distilled from the leaves of the Wintergreen plant.
Is chemically Salicylate of Methyl.

ORRIS ROOT POWDER

Pulvis Iridis

Characters . . A smooth non-crystalline pale yellowish white powder, with an agreeable violet odour and a slight acrid taste.
Insoluble in the usual liquid media.

Use . . . . A flavouring agent used in tooth powders and pastes.

Description . . The powdered dried rhizome of Iris Florentina.

ORTHOFORM

Orthoformum

Characters . . A fine yellowish white, odourless, tasteless crystalline powder.
Insoluble in water. Soluble in 6 parts of alcohol.

Use . . . . Antiseptic and anæsthetic. Has been used as a local anæsthetic, but its greatest value is in the treatment of painful sockets after extraction. It should be applied in the form of a paste with liquid paraffin and lanoline.

An alcoholic solution (1-10) in the treatment of root canals, and 10% in hard paraffin is useful for filling canals of dead teeth.

Description . . The Methyl-ester of Meta-amido-para-oxybenzoic Acid.

OXYGEN

Oxygen

Characters . . A tasteless, colourless and odourless gas, having the atomic weight 16; supplied compressed in cylinders.

Use . . . . Used in combination with Nitrous Oxide Gas for anæsthesia and analgesia, rendering it the safest of all methods.
The medicinal properties of Peroxide of Hydrogen and Sodium Peroxide, etc., are dependent upon the free oxygen liberated.

Description . . Obtained by heating together Manganese Dioxide and Chlorate of Potash, also by Brins' Baryta process.

PARAFFIN, HARD

Paraffinum Durum

Characters . . A colourless, crystalline, wax-like solid. Insoluble in water, sparingly soluble in alcohol, more soluble in ether, readily soluble in oils and fats on heating. Melts at 110° - 145° F.

Use . . . . Used in conjunction with various antiseptics for root-filling. For plugging tooth sockets after extractions. In general surgery by subcutaneous and submucous injection for the correction of various defects about the nose and jaws, also in keritherapy.

Description . . A mixture of several of the harder members of the Paraffin series of Hydrocarbons, usually obtained by distillation from shale.

PARAFFIN, LIQUID

Paraffinum Liquidum

Characters . . A colourless, odourless, tasteless transparent oily fluid.

Use . . . . A solvent for antiseptics as Menthol, Salicylate of Methyl, Iodine, Iodoform, and various essential oils used for spraying the nose and throat.

Description . . Composed of some fluid members of the Paraffin series of Hydrocarbons.

PARAFFIN, SOFT (Vaseline)

Paraffinum Molle

Characters . . A yellowish or white ointment like mass.

Use . . . . Lubricant, and excipient for antiseptic ointments.
Is useful for smearing strips and discs when polishing fillings, and for greasing carborundum wheels when grinding down teeth for crowning.
After sterilisation it may be successfully used for injecting into suppurating and foul cavities by means of a warmed syringe in the same way as Beck's Paste; the advantage claimed is that it is free from any danger of poisoning.

Description . . Composed of some of the softer members of the Paraffin series of Hydrocarbons.

PARAFORM

Paraformaldehydum

Characters . . A white fine crystalline or amorphous powder, with peculiar slightly pungent odour.
Slowly soluble in water or alcohol.

Use . . . . Antiseptic, disinfectant, bactericide and obtundent.

For sensitive dentine a little may be mixed with oxyphosphate cement, and allowed to remain in the cavity a day or two.
Is contained in some mummifying pastes and root-filling preparations.

Description . . Is prepared by polymerising Formic Aldehyde by heat.

PARALDEHYDE

Paraldehydum

Characters . . A colourless liquid, with a penetrating ethereal odour and an acrid, pungent and subsequently cooling taste.

Use . . . . Hypnotic, especially useful in mental and cardiac disease. Best given in capsules.

Dose . . . . $\frac{1}{2}$ to 2 fluid drachms.

Description . . Prepared from ordinary Aldehyde by treating it with small quantities of Hydrochloric Acid.

PERHYDROL

Perhydrol

Characters . . A colourless, odourless liquid having similar properties to Peroxide of Hydrogen *q.v.*, but is ten times the strength of H_2O_2 10 vols.

Use . . . . Bleaches discoloured dentine; should be applied on a pellet of wool and allowed to remain for some minutes. The application should be repeated two or three times if necessary.

Description . . A 30% aqueous solution of Hydrogen Peroxide which is free from acids, although it reddens Litmus.
(Pyrozon is a 25% ethereal solution).

PEROXIDE OF HYDROGEN SOLUTION

Liquor Hydrogenii Peroxidi

Characters . . A colourless, odourless liquid eliminating varying quantities of available oxygen when decomposed.
Acid solutions may be rendered stable by a minute addition of antifebrin.
To avoid decomposition by light it should be kept in amber-coloured or stone bottles.
Tends to deteriorate when filtered through paper.

Use . . . . Antiseptic and astringent. Recommended for washing out septic root canals and swabbing ulcerated surfaces. Diluted with water it may be used as a mouth-wash or spray, after which it is advisable to rinse the mouth thoroughly with warm water or preferably with an alkaline wash.
As a mouth-wash or spray, 1 teaspoonful to a wineglassful of water.
Its use is contra indicated in deep sinuses and closed cavities.
Boricated Peroxide is claimed to be better tolerated by the mucous membrane.

Description . . H_2O_2 is prepared by the interaction of Barium Peroxide, water and a dilute mineral acid. Is obtainable in three strengths, viz. : 10 vols., 12 vols., and 20 vols.
The official Pharmacopœia solution contains about 10 volumes of available oxygen. (Sodium Perborate dissolved in 40 parts water gives a colourless alkaline solution of Hydrogen Peroxide. 170 grains Percarbonate of Sodium in a litre of water containing 60 grains citric acid gives equivalent of one litre H_2O_2, 10 volumes).

PHENACETIN

Phenacetinum

Characters . . White, shining, laminar crystals or in powder. Tasteless and sparingly soluble in water.

Use . . . . Antipyretic, analgesic. Is less toxic than some of the other coal-tar derivatives as Antipyrin and Antifebrin. Commonly given with Citrate of Caffeine (1 or 2 grs.), which counteracts the tendency to circulatory depression, specially indicated in migraine.

Dose . . . . 5-10 grs. in powder, cachets or tablets.

Description . . Produced by the action of Glacial Acetic Acid on Paraphenetidin, which is obtained from Phenol.

PHENALGIN

Phenalginum

Characters . . A white tasteless powder sparingly soluble in water.

Use . . . . Antipyretic and hypnotic. Has a depressant action on the heart.

Dose . . . . 5-20 grs. in powder, cachets or tablets.

Description . . An ammoniated derivative of Antifebrin.

PHOSPHOROUS

Phosphorus

Characters . . A pale yellowish, almost translucent waxy solid of characteristic and disagreeable odour. Rapidly oxidises on exposure to air. Should be kept under water

Insoluble in water, slightly soluble in alcohol, 1-200 ether, 1-25 chloroform.

Use . . . . Tonic, recommended in neuralgia accompanied by great debility. Is best prescribed in pill form, to be taken every four hours.

Dose . . . . $\frac{1}{100}$ grain.
Description . . A non-metallic element obtained from bones.

PILOCARPINE

Pilocarpina

Characters . . The official salt, the Nitrate, is in small white crystals.
Soluble 1-8 of water.
Use . . . . Diaphoretic and sialagogue. Administered hypodermically as an antidote to Atropine and Cocaine poisoning (Nitrate gr. $\frac{1}{4}$).
Dose . . . . $\frac{1}{20}$ to $\frac{1}{2}$ grain.
Description . . An alkaloid obtained from the leaves of the Jaborandi plant.

PIPERAZIN

Piperazinum

Characters . . Colourless alkaline deliquescent crystals having a saline taste.
Soluble in water.
Use . . . . Given chiefly for the uric acid diathesis and hence may be useful in Pyorrhœa Alveolaris. Is conveniently prepared in effervescent granules.
Dose . . . . 4-10 grs. in powder, cachets, tablets or mixture.
Description . . Diethylene-diaminine. Is produced by the action of Ammonia on Ethylene Bromide or Chloride.

PITUITARY GLAND EXTRACT

Characters . . A brownish odourless substance, insoluble in all ordinary media and usually seen in tablet form of standard strength.
Use . . . . Recommended in surgical shock and collapse.

Dose . . . . 2-4 grs. three or four times daily after food.

Description . . An extract of the infundibular substance of the gland.

PLASTER OF PARIS

Calcii Sulphas

Characters . . A white heavy powder of different degrees of fineness.

Use . . . . . In the laboratory for model making; in the surgery for taking impressions and for making bandages.

Description . . Purified native Sulphate of Calcium.

POPPY HEADS

Capsulæ Papaveris

Characters . . Dried brownish capsules containing a large number of loose, small blackish seeds.

Use . . . . Sedative.
The crushed capsule is used for making a decoction for hot fomentations in neuralgia, periodontal diseases and abscesses. The seeds should be rejected. The addition of an equal quantity of Camomile flowers is recommended :— Poppy Heads, 2; Camomiles, 1 oz.; Water, 2 pints. Boil down to 1 pint.

Description . . The nearly ripe fruit of the Poppy.

POTASH (Caustic)

Potassa Caustica

Potassii Hydroxidum

Characters . . White deliquescent sticks or cakes.
Faint odour.
Very soluble in water.
Exposed to the air, rapidly absorbs moisture and carbon dioxide.

Use . . . . Escharotic, acting by abstracting the water from the tissues. Used to destroy exuberant granulations, for removing gum tissue protruding into tooth cavities or overlying the cervical edges. Is best employed with Lime (Potassa cum Calce). May be used in a 10% solution for destroying remnants of pulp tissue. Care must be taken not to force it through the apical foramen, and also to neutralise with dilute acid and syringe well after treatment.

Description . . KHO.
Obtained by boiling down solutions of Potash.

POTASSA CUM CALCE

Potassa c̄ Calce

Characters . . Resembles Caustic Potash (*q.v.*) in appearance, but does not diffuse so quickly.
Should be kept in well-stoppered bottles.

Use . . . . (*Vide* Potash Caustic).
Its action should be carefully circumscribed by means of vaseline, cotton rolls or napkins.

Description . . Hydrate of Potash, 2 parts; Oxide of Lime, 1 part.

POTASSIUM BICARBONATE

Potassii Bicarbonas

Characters . . A white crystalline powder or colourless prismatic crystals without odour and with an alkaline saline taste.
Soluble 1 in 4 of water.

Use . . . . Antacid and uric acid solvent, hence its supposed value in cases of Pyorrhœa Alveolaris.

Dose . . . . 5 to 20 grains.

Description . . Obtained by saturating a strong aqueous solution of Carbonate of Potash with CO_2.

POTASSIUM BICHROMATE

Potassii Bichromas

Characters . . Large orange red, odourless, translucent prismatic crystals, having a bitter taste.
Soluble in water.

Use . . . . Escharotic and stimulant. May be used in weak solutions (5%) for applying to indolent ulcers, mucous patches, and sloughing wounds.
Used in the preparation of histological specimens.

Description . . Prepared by roasting Chrome Iron Stone with Carbonate of Potash and subsequent treatment with Nitric Acid and heat.

POTASSIUM BROMIDE

Potassii Bromidum

Characters . . Colourless or white odourless cubical crystals with a strong characteristic saline taste.
Freely soluble in water.

Use . . . . Sedative and hypnotic. Very successful in hysteria, migraine and neuralgia. May be given with advantage in nervousness, caused by fear of dental operations, on the preceding day.
Bromism is liable to occur if administration be continued too long.

Dose . . . . 5-30 grs. 10 grs. dissolved in water and Syrup of Orange ½ dr. added, may be taken two or three times in the day.

Description . . Prepared by crystallisation from the fused product of a mixture of Bromine and Solution of Potash.

POTASSIUM CHLORATE

Potassii Chloras

Characters . . Colourless, glistening, translucent, monoclinic prisms or plates, or as a white odourless powder, with a cooling saline taste.
Soluble 1 in 16 of cold water.

Use . . . . Alterative, local stimulant, and antiseptic.
Recommended as a mouth-wash (10 grs.-1 oz.) for spongy, inflamed, and irritable gums; useful in ulcerative and mercurial stomatitis, pyorrhœa alveolaris and syphilitic affections. The powder may be applied to aphthæ in the mouth. It is advantageously added to tooth powders and pastes.

Dose . . . . 3-5 grs. in solution or tablets.

Description . . Prepared by passing Chlorine into a mixture of Carbonate of Potash and Slaked Lime and subsequent purification by crystallisation.

POTASSIUM IODIDE

Potassii Iodidum

Characters . . Colourless, translucent or white opaque cubical crystals with a saline somewhat bitter metallic taste. Alkaline in reaction.
Freely soluble in water.

Use . . . . Alterative. Given in tertiary syphilis, also in actinomycosis in large doses with complete success. Is useful in morbid conditions of the mucous membrane, acute alveolar abscesses and chronic metallic poisoning.
The danger of Iodism should always be borne in mind; this condition is dependent on the susceptibility of the

patient, as is the case with many drugs. It is for this reason that organic compounds of Iodine are to be preferred.
Externally as a liniment (*vide* Liniment of Potass. Iod. with Soap) is indicated in inflammatory conditions of the lymphatic glands. As a solvent in Tincture of Iodine.

Dose . . . . 5-20 grains.
The amount given varies considerably. Doses of 5 grains thrice daily is usual, but in syphilis of the nervous system and actinomycosis 20 grs. is frequently given.

Description . . Prepared by crystallisation from the fused products of Iodine and Solution of Potash.

POTASSIUM PERMANGANATE

Potassii Permanganas

Characters . . Slender, dark purple prisms, odourless and of a sweetish astringent taste.
Freely soluble in water.
Should be handled with care when brought into contact with readily oxidisable substances as alcohol, gallic and tannic acids, glycerine and essential oils, as it readily parts with its oxygen and frequently causes an explosion.
Solutions mixed with H_2O_2 evolve nascent oxygen. Its disinfecting and deodorising properties are due to its yielding oxygen in the presence of organic matter.

Use . . . . Disinfectant.
Deodorant, bactericide.
May be employed as a mouth-wash (2 grs. to 1 oz., well diluted) in such septic conditions as fœtor of the breath, foul ulcers, and syphilitic sores.

Has a tendency to discolour the teeth. Employed for disinfecting the hands, followed by a solution of oxalic or hydrochloric acid to remove the stain.

Dose . . . . 1-3 grains.

Description . . Prepared by evaporating a mixed solution of Chlorate of Potash and Caustic Potash in the presence of Black Oxide of Manganese.

PROTARGOL

Protargol

Characters . . A light brown, odourless powder, with a disagreeable metallic taste.
Soluble in water.

Use . . . . Antiseptic, astringent.
May be used in some conditions in place of Argyrol (*q.v.*), though the latter is usually preferred.

Description . . Contains 8·3% of silver combined with protein.

PUMICE STONE POWDER

Pulvis Lapis Pumicis

Characters . . A heavy powder of varying degrees of fineness, without odour and of a grey colour.

Use . . . . Chiefly used in the laboratory for polishing. Is at times permissible for use in the mouth after scaling.

Description . . Powdered porous volcanic rock.

PYRAMIDON

Pyramidon

Characters . . Yellowish, white, tasteless, crystalline powder, readily soluble in water and alcohol.

Use . . . . Analgesic and antipyretic. Recommended in neuralgia of peripheral origin.

Dose . . . . 3 to 10 grs. in powder, cachet or mixture.

Description . . Dimethyl-amido-antipyrin.

QUININE AND IRON CITRATE

Quininæ et Ferri Citras

Characters . . Scales of a greenish golden yellow, somewhat deliquescent and entirely soluble in water.
Solution is slightly acid, and has a bitter taste resembling quinine.

Use . . . . Tonic and analgesic, having the advantages of being freely soluble and possessing the additional tonic properties of iron.
In conjunction with Tincture of Gelsemium (3 to 5 drops) it is said to be a specific in neuralgia.

Dose . . . . 5 to 10 grs. in water may be prescribed with Syrup of Orange, 1 dr. to the oz.

Description . . Prepared from Persulphate of Iron and Sulphate of Quinine by the action of Ammonia and Citric Acid.

QUININE HYDROCHLORIDE

Quininæ Hydrochloridum

Characters . . White, odourless, silky acicular crystals, with a very bitter taste.
Soluble 1 in 40 of water, readily soluble in alcohol.

Use . . . . Tonic, antipyretic, analgesic and a specific in certain fevers.
The quinine salts of which the two most important are given resemble one another in their therapeutic properties.
The action varies with the idiosyncrasy of the patient, whilst one can take large doses, another is quickly affected by

minute doses, and suffers from headache, and ringing in the ears.
Has been recommended for its tonic and antiseptic properties as a local application to pyorrhœa pockets.

Dose . . . . 1 to 10 grs. in powder, tablets or cachets.
May be given in Wine or Tincture of Orange.
The latter resembles the official Tincture of Quinine which contains 1 gr. in 1 dr.

Description . . Hydrochloride of the alkaloid Quinine prepared from various kinds of Cinchona bark.
(Quinine di-hydrochloride is an acid quinine hydrochloride).

QUININE SULPHATE

Quininæ Sulphas

Characters . . *Vide* Quinine Hydrochloride.

Use . . . . *Vide* Quinine Hydrochloride, which for general purposes is preferable.

Dose . . . . 1 to 10 grains in cachets or tablets. In mixtures acidulated with dilute sulphuric acid, a drop for each grain.

Description . . The Sulphate is prepared from the same source as the Hydrochloride by substituting Sulphuric Acid for Hydrochloric.

RESORCIN

Resorcinol

Characters . . In white crystalline plates. Melts at 230° F. and readily volatilises. Freely soluble in water, alcohol and glycerine. Darkens on exposure to light.

Use . . . . Powerful antiseptic. 1% aqueous solution with an addition of borax and glycerine is recommended as a mouth-

wash after operations and improves unhealthy wounds.
Useful as a paint (5%) in syphilitic and obstinate ulcers.

Description . . A diatomic phenol. Metadihydroxy-benzene.

RHUBARB ROOT

Radix Rhei

Characters . . A brownish yellow tough, hard and gritty substance having a bitter astringent taste and peculiar odour.

Use . . . . Cathartic and astringent, the cathartic action preceding the astringent. Useful in acute inflammatory diarrhœa in children during teething, and should be given in small doses.

Dose . . . . 3 to 10 grains.

Description . . The dried prepared rhizomes of the Rheum Palmatum.

ROUGE

Ferri Oxidum

Characters . . A heavy dark red powder, insoluble in the usual media.

Use . . . . For polishing metal work it is chiefly used in the laboratory, but may be employed for metallic fillings in the mouth, preferably on strips, discs or tape.

Description . . Fe_2O_3.
Prepared by calcining Sulphate of Iron.

SACCHARIN

Glusidum

Characters . . A white crystalline powder with an exceedingly sweet characteristic taste. 500 times as sweet as cane sugar.
Very sparingly soluble in cold water, 1 in 28 of boiling water.

Use . . . . Used as a substitute for sugar in dentifrices, about $\frac{1}{4}$ gr. to the oz. Being more soluble in alkaline solutions, tablets are prepared with Bicarbonate of Soda (soluble saccharine) for sweetening tea, etc., in diabetes and allied complaints.

Dose . . . . $\frac{1}{2}$ to 2 grains.

Description . . A sweet Imide derived from the Toluene of Coal Tar.

SAFFRON

Croci Stigmata

Characters . . Deep reddish yellow substance, having the appearance of shreds, with a slight peculiar odour and taste.

Use . . . . Used for colouring and flavouring liquid dentifrices.
The Tincture of Saffron may be prescribed in mouth-washes (1 or 2 drs. to 4 oz.), imparting to them a pleasing yellow tinge.

Description . . The dried stigmas and tops of the Crocus Sativus.

SALICIN

Salicinum

Characters . . Colourless, tabular or slender needle-shaped crystals, having a very bitter taste.
Slightly soluble in water and less in alcohol.

Use . . . . Antipyretic. Is better tolerated than the salicylates in rheumatic affections, and hence its use is indicated in certain secondary conditions resulting from pyorrhœa alveolaris.

Dose . . . . 5 to 20 grs. in powder, tablets or preferably cachets.

Description . . A glucoside obtained from the bark of various species of Willow and Poplar.

SALICYLATE OF METHYL

Methyl Salicylas

Characters . . A colourless or slightly yellowish oily liquid with a characteristic odour and taste.
Soluble in alcoholic liquids and oils.

Use . . . . Antiseptic and flavouring agent.
Used as a substitute for the more expensive Oil of Wintergreen. For tooth powders and pastes about 1 drop to the oz. is recommended. May be mixed with oils and liniments for external application in neuralgic and rheumatic affections.
For direct application to the temporomandibular joint in arthritis it should be sprinkled on lint and covered with oiled silk.

Description . . Artificial Oil of Wintergreen. Is prepared by substituting the displaceable Hydrogen of Salicylic Acid by Methyl.

SALIPYRIN

Salipyrinum

Characters . . Hexagonal crystals or a white crystalline, odourless powder.
Sparingly soluble in water, soluble 1 in 4 alcohol.

Use . . . . Antipyretic, analgesic. Useful in neuralgia and painful rheumatic conditions.

Dose . . . . 10-30 grs. In powder or cachet.

Description . . Salicylate of Antipyrin.

SALOL

Salol

Characters . . A white crystalline powder of a faintly aromatic odour and sweetish taste. Almost insoluble in water, freely soluble in alcohol.

Use . . . . Antipyretic, antiseptic. May be used as a dusting powder in place of Iodoform. Is an ingredient in some liquid dentifrices on account of its agreeable flavour; these turn milky when added to water.
Is given internally as an intestinal disinfectant, and is decomposed into Carbolic and Salicylic acids by the alkalinity of the small intestine. Has been recommended in acute and chronic rheumatism.

Dose . . . . **5-15** grs. In powder, tablets or cachet.

Description . . Salicylate of Phenyl.

SALTS, EPSOM

Magnesii Sulphas

Characters . . Small, colourless, odourless, translucent rhombic or acicular crystals having a bitter saline taste. Freely soluble in water.

Use . . . . Saline cathartic, a mild and safe hydragogue purgative. Especially indicated in acute alveolar abscess, acting more promptly and powerfully when given on an empty stomach. Also useful in lead poisoning and septic conditions generally. Is an ingredient in Black Draught *q.v.*

Dose . . . . $\frac{1}{2}$ to 2 drs. for repeated administration. For a single dose $\frac{1}{4}$ to $\frac{1}{2}$ oz. in a wineglass of hot water.

Description . . Prepared from native Dolomite by the action of Sulphuric Acid.

SALTS, GLAUBER

Sodii Sulphas

Characters . . Colourless, transparent efflorescent, monoclinic prisms with a bitter cooling saline taste.
Soluble 1 in 3 parts of water.

Use . . . . . A powerful hydragogue cathartic. Its action being frequently accompanied by griping, it is not generally so suitable as Epsom Salts. Its use is indicated in similar conditions and may be administered with a small quantity of Tincture of Ginger (15 minims).

Dose . . . . $\frac{1}{2}$ to 2 drs. repeated, $\frac{1}{4}$ to $\frac{1}{2}$ oz. for a single dose.

Description . . Prepared from the residue left in the manufacture of Hydrochloric Acid by neutralising with Carbonate of Soda.

SERA

Sera

Characters . . Almost colourless, transparent liquids, sometimes cloudy and having the odour of a preservative agent.

Use . . . . . To produce a condition of passive immunity in certain infectious diseases, *e.g.* :

Diphtheria,
Tetanus,
Erysipelas,
Ludwig's Angina.

Dose . . . . Varying.

Description . . Sera are either (*a*) antitoxic or (*b*) antibactericidal.
The former are prepared by injecting toxins subcutaneously into a healthy animal until active immunity is obtained. The latter by injecting cultures of bacteria.
The animal is subsequently bled and the serum separated and standardised.

SERUM (Normal Horse)

Serum

Characters . . A clear, colourless fluid.

Use . . . . To increase the coagulability of the blood, it is said to produce a rapid increase of hæmoglobin and corpuscles. Is indicated in anæmia, hæmophilia, and Hæmorrhages.
May be given by the mouth, rectum or subcutaneously.

Dose . . . . From 10 ccs. to 150 ccs.

Description . . Prepared by separation from the blood of a healthy horse.

SILVER NITRATE

Argenti Nitras

Characters . . Colourless, transparent tabular rhombic crystals.
Freely soluble in distilled water, 1 in 24 alcohol.
Darkens on exposure to light.

Use . . . . Astringent (1-1,000), antiseptic, hæmostatic.
Caustic for superfluous granulations, mucous patches, ulcers and allied affections. Coagulant of the dentinal fibrils, and may be applied by fusing a crystal on an old ball burnisher to exposed and sensitive dentine and cementum. When using, the part should be isolated to protect the gum, etc., from injury. A glass of warm salt water should be at hand for the patient to freely rinse the mouth after the application.
A solution used in conjunction with a reducing agent is made use of in root canal treatment.

Dose . . . . $\frac{1}{4}$-$\frac{1}{2}$ grain.

Description . . $AgNO_3$.
Prepared by the action of Nitric Acid on refined Silver.

SOAP, HARD

Sapo Durus

Characters . . A white or whitish solid with a characteristic appearance and dry saponaceous touch.

Use . . . . Chiefly used as an ingredient in dentifrices, from 10 to 20% being a suitable quantity.

Description . . Prepared by the interaction of Olive Oil and Soda.

SOAP, LIQUID

Liquor Saponis

Characters . . An amber-coloured clear liquid with characteristic odour of various perfumes or antiseptics.

Use . . . . Convenient and economical for cleansing purposes in the surgery when used from a liquid soap dispenser.

Description . . Prepared by diluting soft soap, or by dissolving an emulsion of olive and caustic potash solution in water and alcohol containing a perfume or antiseptic.

SOAP, SOFT

Sapo Mollis

Characters . . A yellowish white or yellowish green unctuous semi-solid.

Use . . . . Soft soap is used in several liniments and for making ether and other liquid soaps.

Description . . Prepared by the interaction of Potash and Olive Oil.

SODIUM BENZOATE

Sodii Benzoas

Characters . . A white, amorphous powder; may have a slight odour of Benzoin.
Freely soluble in water.

Use . . . . Mild antiseptic, an excellent constituent of liquid dentifrices and mouth-washes, 5 or 10 grs. to the ounce being recommended.

Dose . . . . 5-30 grains.

Description . . Prepared by neutralising Benzoic Acid with a solution of Carbonate of Soda.

SODIUM BICARBONATE

Sodii Bicarbonas

Characters . . Small opaque prismatic crystals, or more frequently an odourless, white, microcrystalline powder with a saline taste and alkaline reaction.
Soluble 1 in 12 parts of water.
Insoluble in alcohol.

Use . . . . Antacid. As an ingredient in mouth-washes (10 grains-1 oz.) where an alkaline solution is desirable. After clearing root-canals with acid a strong solution should be used previous to irrigating with warm water. Is useful as an application in many cases of hypersensitive dentine or cementum at cervical margins. When it is proposed to allow a thin layer of decalcified dentine covering the pulp to remain—a saturated solution should be applied previous to antiseptics.

Dose . . . . 5 to 30 grs. 5-10 grs. before meals to stimulate secretion of gastric juice. 10-20 grs. after meals to correct hyperacidity.

Description . . $NaHCO_3$.
Prepared by saturating a solution of Carbonate of Soda with Carbonic Acid Gas.

SODIUM BROMIDE

Sodii Bromidum

Characters . . Minute white crystals or a white crystalline powder, having a saline and slightly bitter taste.
Freely soluble in water.

Use . . . . Sedative, hypnotic. Useful in hysteria and neuralgia. Its medicinal properties are similar to Potassium Bromide (*q.v.*), but is less depressant and more easily tolerated by the stomach.

Dose . . . . 5 to 30 grains.

Description . . Prepared by crystallisation from the fused products of a mixture of Bromine and Solution of Soda.

SODIUM CARBONATE (Washing Soda)

Sodii Carbonas

Characters . . Colourless, translucent, efflorescent, monoclinic crystals, having a caustic taste and strong alkaline reaction.
Freely soluble in water.

Use . . . . May be beneficially added to the water used for sterilising instruments in the proportion of about 5 grs. to the oz.

Description . Obtained from Chloride of Sodium by reaction with Bicarbonate of Ammonium and subsequent ignition.

SODIUM CHLORIDE (Common Salt)

Sodii Chloridum

Characters . . White cubical crystals, or more usually a white crystalline powder with a strong saline taste and neutral reaction.
Readily soluble in water.

Use . . . . Is useful as an emetic (½ to 1 oz.) when dissolved in warm water. A valuable antidote to Silver Nitrate (*q.v.*) Is the chief ingredient in normal Saline Solution (78·75 grs. to 1 pint).
As a gargle, and is recommended for gently brushing inflamed and bleeding gums.

Description . . Found native.

SODIUM HYDROXIDE (Caustic Soda)

Sodii Hydroxidum

Characters . . White deliquescent sticks or cakes. Freely soluble in water.

Use . . . . May be used similarly to Caustic Potash, *q.v.*

Description . . Obtained by boiling down Solution of Soda.

SODIUM HYPOSULPHITE (Thiosulphate)

Sodii Hyposulphis

Characters . . Colourless, transparent, monoclinic prisms, having a cooling and somewhat bitter sulphurous taste.
Freely soluble in water.

Use . . . . Removes stains produced by Silver Nitrate, decolourises Iodine solutions forming a double salt.
Fixing salt for radiographic plates and films.

Description . . Formed from Sodium Sulphite by the addition of Sulphur.

SODIUM PEROXIDE

Sodii Peroxidum

Characters . . A whitish amorphous powder which dissolves in water with a hissing noise,

evolving heat and forming Peroxide of Hydrogen.
Rapidly deliquescent.

Use . . . . A powerful oxidising agent. For bleaching teeth and sterilising root canals, it may be worked into the cleared canals and moistened with water, afterwards thoroughly syringing with warm water. For disorganising remnants of pulp tissue.
To facilitate its application it may be made into a paste with chloroform, the latter being allowed to evaporate, the powder is left where it is required.
Steel instruments should not be used.

Description . . Na_2O_2.
Obtained by passing air over metallic Sodium at a temperature of 400° C.

SODIUM SALICYLATE

Sodii Salicylas

Characters . . Small colourless scales or tabular crystals with a pearly lustre, no odour, sweetish taste. Soluble 1 in 1 of water, 1 in 5 of alcohol (90%).

Use . . . . Antipyretic, sedative. Anæsthetic action in the mouth; allays post extraction pain when applied in solution on wool to the affected tooth socket. A specific in acute rheumatism. In Ionisation a 5% solution used at the negative pole in conjunction with Tincture of Iodine painted on the gum, has given good results in periodontal disease, especially when associated with rheumatism.

Dose . . . . 10 to 30 grains.

Description . . Prepared by the interaction of Salicylic Acid and Sodium Carbonate. (Also seen in yellowish or pinkish-white pearly scales when prepared from ' Natural ' Salicylic Acid).

SOLUTION OF AMMONIA

Liquor Ammoniæ

Characters . . A clear, colourless liquid containing 32-35% by weight of Ammonia Gas (NH_3) forming the strong solution—the weaker official solution contains 10%.
Has a characteristic pungent odour, a powerful caustic taste and a strongly alkaline reaction.

Use . . . . A general stimulant.
May be applied to the nostrils in syncope.
Is the pungent factor in Smelling Salts and an ingredient in Ammoniated Tincture of Quinine.
Decolorises Iodine solutions forming a double salt.

Dose . . . . 10-20 minims of the weaker solution.

Description . . Prepared by passing Ammonia Gas into water.

SOLUTION OF ARSENIC (Fowler's)

Liquor Arsenicalis

Characters . . A clear reddish brown liquid with odour of lavender.

Use . . . . As a general tonic usually in conjunction with Iron. As a paint in chronic general periodontitis and ulcerative stomatitis.

Dose . . . . 2-8 minims in water after food.

Description . . A 1% alkaline solution containing Compound Tincture of Lavender.
(A 1% acid solution of Arsenic is prepared for dispensing with Strychnine).

SOLUTION OF CARMINE

Liquor Carmini

Characters . . A deep red solution usually having a slight ammoniacal odour.

Use . . . . Colouring agent.
Useful for plaster impressions—a few drops should be mixed with the water; also for dentifrices, imparting to them a pleasing rose tint.

Description . . Prepared by dissolving Carmine (6-100 parts) in water and glycerine by the aid of Solution of Ammonia.

SOLUTION OF CHLORINE

Liquor Chlori

Characters . . A yellowish green liquid with a strong odour.

Use . . . . Antiseptic, bleaching agent.
Used as a gargle when diluted with 6-8 parts water in tonsillitis, diphtheria, etc. As an application to foul ulcers and septic sockets.

Dose . . . . 15-20 minims.

Description . . Prepared by the action of Black Oxide of Manganese on Hydrochloric Acid and subsequent solution of the gas.
A more stable solution can be prepared by the electrolysis of Hydrochloric Acid.

SOLUTION, DAKIN'S

Liquor Sodii Hypochloriti (Dakin).

Characters . . A clear watery liquid with the characteristic odour of chlorine.

Use . . . . Antiseptic, deodorant, disinfectant.
Recommended for irrigating septic wounds; may be advantageously used diluted (1 in 6) as a mouth-wash in oral sepsis, and for cleansing dental plates.

Description . . Prepared from Sodium Carbonate, 14 grammes; Bleaching powder, 20 grammes; water, 1 litre; with subsequent addition of Acid. Boric 4 grammes.
Contains 0·75% Sodium Hypochlorite.

SOLUTION, DOBELL'S

Liquor Sodii Boratis Compositus

Characters . . A clear liquid with odour of phenol.

Use . . . . Antiseptic. A teaspoonful added to a small tumbler of warm water makes a good stimulating antiseptic mouth-wash, especially indicated after extractions.

Description . . Composed of :—
Borax, 15 parts.
Bicarbonate of Soda, 15 parts.
Carbolic Acid, 3 parts.
Glycerine, 35 parts.
Water, to 1,000 parts.

SOLUTION OF IODINE COMPOUND U.S.P.

Liquor Iodi Compositus U.S.P.

Characters . . A deep brown solution with characteristic peculiar odour. Stains linen and skin deeply.

Use . . . . Antiseptic, deodorant, counter-irritant. Being an aqueous solution of suitable strength, is perhaps preferable to the B.P. Tinctures (*q.v.*) for dental purposes.
Valuable in actinomycosis and all inflammatory conditions of the periodontal membrane.

Description . . 5% of Iodine in a 10% aqueous solution of Iodide of Potassium.

SOLUTION OF LIME (Lime Water)

Liquor Calcis

Characters . . A clear, colourless, odourless liquid, having a slight saline taste.
On exposure to the air it quickly becomes cloudy, due to the formation of Carbonate of Lime, and is then useless.

Use . . . . Antacid, astringent, sedative. Especially useful in vomiting for women and children. Recommended for application on a soft brush to the gums in chronic catarrh. Given with milk to infants, supplies the deficiency of lime salts, which may be the cause of rickets and imperfectly calcified teeth. Mixed with Linseed Oil forms Carron Oil, an excellent application for burns and scalds.

Dose . . . . 1 to 4 ozs.

Description . . A solution of washed slaked lime in water. Contains $\frac{1}{2}$ gr. of Oxide of Calcium in each oz.

SOLUTION OF MORPHINE ACETATE

Liquor Morphinæ Acetatis

Characters . . A water-white liquid with faint acetous odour and bitter taste.

Use . . . . Morphia has but a limited use in dentistry, it is sometimes added to pulp devitalisers, but is of doubtful value. The two official solutions here given are the most serviceable for administration by the mouth.

Morphia is an analgesic and hypnotic, and is less apt, than opium, to disturb the digestion or cause constipation, headache or nausea.

Children are very susceptible to its action.

The administration is more within the domain of the general practitioner. A small dose of 10 minims may be given from time to time to relieve bad neuralgic pains and aid sleep.

Dose . . . . 10 to 60 minims.

Description . . A 1% solution of Acetate of Morphia in alcohol and water.

SOLUTION OF MORPHINE HYDROCHLOR

Liquor Morphinæ Hydrochloridi

Characters . . A water-white liquid, without odour but with a bitter taste.

Use . . . . As Acetate *q.v.*

Dose . . . . 10 to 60 minims.

Description . . A 1% solution of Hydrochloride of Morphia in alcohol and water.

SOLUTION OF MORPHINE TARTRATE (Hypodermic)

Injectio Morphinæ Hypodermica

Characters . . A clear liquid without odour, but with a bitter taste.

Use . . . . A hypodermic injection given judiciously before the administration of a general anæsthetic decreases the susceptibility of the patient to shock.

Dose . . . . 5-10 minims injected subcutaneously.

Description . . A 2·5% solution of Tartrate of Morphia in distilled water.

SOLUTION OF OPIUM, SEDATIVE

Liquor Opii Sedativus

Characters . . A dark brown liquid with the slight characteristic odour of opium and a bitter taste.

Use . . . . Anodyne and sedative.
A stronger preparation than the Tincture *q.v.*
May be given when pain is exceedingly severe to give relief and rest.

Dose . . . . 5 to 20 minims.

Description . . Prepared by maceration of Opium in alcohol, sherry and water, with calcium hydrate.

SOLUTION OF PERCHLORIDE OF IRON

Liquor Ferri Perchloridi

Characters . . A brown liquid having a strongly astringent taste. Readily miscible with water and alcohol.

Use . . . . Tonic, styptic, hæmostatic and astringent (a stronger official solution—Liq. Ferri Perchlor. fort—may be used as an escharotic).

As a general tonic may be prescribed with a little Glycerine or Chloroform water.

Sulphate of Quinine will dissolve in it readily, and the two combined make an excellent tonic. It should be well diluted and taken through a glass tube on account of its deleterious action on the teeth. Mixed with an equal part of Glycerine it forms a good paint in faucal inflammation. Highly useful in anæmia.

For arresting hæmorrhage after extractions may be used on a pellet of wool, but is not generally advised. (*Vide* also Tincture of Iron).

Dose . . . . 5-15 minims.

Description . . Prepared by the action of Hydrochloric Acid on Iron Wire and subsequent treatment with Nitric Acid.

SOLUTION OF POTASH

Liquor Potassæ

Characters . . A clear, colourless and odourless strongly alkaline solution.

Use . . . . Caustic. Combines with Carbolic Acid, forming solution of Phenate of Potash.

Description . . Prepared by the interaction of Carbonate of Potash and Slaked Lime in water. Contans 5% of pure Potassium Hydroxide.

SOLUTION OF POTASSIUM PHENATE

Liquor Potassii Carbolatis

Characters . . An almost colourless liquid with the characteristic odour of phenol. Turns a brownish colour with keeping.

Use . . . . Antiseptic, anodyne. One teaspoonful in a small tumblerful of warm water makes an excellent mouth-wash for use after extractions.

Description . . Consists of :—
Carbolic Acid, 4 drs.
Solution of Potash, 6 drs.
Water, to 4 ozs.

SOLUTION OF SODIUM PHENATE

Liquor Sodii Carbolatis

Characters . . Resembles solution of Potassium Phenate.

Use . . . . As solution of Potassium Phenate which is more generally used.

Description . . Consists of :—
Carbolic Acid, 4 drs.
Solution of Soda, 6 drs.
Water, to 4 ozs.

SOLUTION OF STRYCHNINE

Liquor Strychninæ Hydrochloridi

Characters . . A colourless and odourless liquid with an acid reaction and very bitter taste.

Use . . . . Cardiac and respiratory stimulant, and a general tonic. As a tonic it may be given in small doses of three minims with a little Syrup of Orange and water. In neuralgia is frequently prescribed in combination with Citrate of Iron and Quinine.
Two minims may be injected subcutaneously for peripheral paralysis, and five

minims, repeated if necessary, in cases of syncope.

Dose . . . . 2-8 minims.

Description . . A 1% solution of Strychnine in dilute Hydrochloric Acid, water and alcohol.

SPIRIT OF AMMONIA, AROMATIC (Sal Volatile)

Spiritus Ammoniæ Aromaticus

Characters . . A clear, almost colourless liquid, having a strong ammoniacal odour and taste.

Use . . . . A cardiac and respiratory stimulant. Its action is due to the ammonia gas liberated.
It acts quickly, and is an invaluable remedy in syncope and collapse.
It is the least disagreeable form of administering ammonia, and a teaspoonful is recommended to be given well diluted with water.

Dose . . . . 20-40 minims repeated.
60-90 minims as a single dose.

Description . . An aromatic solution of Ammonia in alcohol and water, together with the Oils of Nutmeg and Lemon.

SPIRIT OF CHLOROFORM

Spiritus Chloroformi

Characters . . A clear, colourless liquid with the characteristic odour and taste of chloroform.

Use . . . . Sedative, carminative and antispasmodic.
It may be given in small doses with Aromatic Spirits of Ammonia.
Is frequently used in mixtures and liquid dentifrices as a sweetening agent.

Dose . . . . 5 to 20 minims repeated.
30 to 40 minims as a single dose.

Description . . A solution of Chloroform 1 part in Alcohol (90%) to make 20 parts.

SPIRIT, METHYLATED

Spiritus Methylatus

Characters . . A clear, mobile, volatile and inflammable liquid having a distinctive spirituous odour mingled with that of naphtha and petrol.
Turns cloudy when added to water.

Use . . . . May be used in place of Rectified Spirits of Wine in liniments.
Is mixed with Rouge for polishing metal work.
For the spirit lamp.

Description . . Alcohol to which a fixed percentage of Petroleum Oil and Wood Naphtha are added.

SPIRIT OF NITROUS ETHER (Sweet Spirits of Nitre)

Spiritus Etheris Nitrosi

Characters . . A transparent pale yellow or greenish yellow mobile, volatile and inflammable liquid.
Has a pleasant ethereal odour and a burning taste.

Use . . . . Stimulant, diaphoretic, diuretic and antipyretic.
Has no great use in dental surgery, but is given to children in quite small and frequent doses, well diluted, in convulsions during the eruptive period of the temporary teeth. It is commonly used as a diaphoretic and is a household remedy.

Dose . . . . 20-40 minims repeated.
60-90 minims as a single dose.

Description . . A spirituous solution containing Nitrous Compounds, Aldehyde, and other substances.

SPIRIT, RECTIFIED (Alcohol 90 per cent.)

Spiritus Vini Rectificatus

Characters . . A transparent, colourless, mobile, volatile and inflammable liquid having a distinctive spirituous odour and burning taste.

Use . . . . Stimulant in syncope and shock. Antiseptic and astringent. A solvent for Camphor, Balsams, Iodine, and Essential Oils; hence its great use in toothache remedies and liquid dentifrices.
Used largely for the preparation of liniments and tinctures.
Mixed with Lead or Camphor Water it makes a good evaporating and, hence, cooling lotion.
Dehydrant in the preparation of tooth cavities and histological specimens.

Description . . Prepared by the distillation of fermented saccharine fluids.

STRYCHNINE

Strychnina

Characters . . Translucent, colourless, rhombic, prisms or a white crystalline powder.
Odourless, with an intensely bitter taste.
Sparingly soluble in water.

Use . . . . Cardiac and respiratory stimulant. The chief means by which a dental surgeon may be called to administer Strychnine is by hypodermic injection. Standardised tablets of a soluble salt ($\frac{1}{60}$ grain) are prepared for this purpose and the use of the pure drug should be avoided.
Is a valuable remedy in cases of poisoning by such drugs as Cocaine, Opium, Morphia, Chloral, Ether, Chloroform, and Ethyl Chloride, which depress the cardiac and respiratory centres.

Dose . . . . $\frac{1}{64}$ - $\frac{1}{16}$ grain.

Description . . An alkaloid prepared from Nux Vomica seeds.

STYPTICIN

Cotarninæ Hydrochloridum

Characters . . A pale yellow crystalline powder. Soluble in water and alcohol.

Use . . . . Used internally to arrest hæmorrhages rapidly.
A saturated solution is recommended to be applied on a plug of wool to tooth sockets.

Dose . . . . $\frac{1}{3}$ to $\frac{1}{2}$ gr. in cachet, or by hypodermic injection.

Description . . Stypticin is produced by the oxidation of Narcotine and subsequent treatment with Hydrochloric Acid.

STYPTOL

Cotarninæ Phthalas

Characters . . A micro-crystalline powder soluble in water.

Use . . . . Standardised tablets are prepared for hypodermic injection to arrest hæmorrhage.
Styptol is said to be less irritating than Stypticin.

Dose . . . . $\frac{3}{4}$ gr. four to six times a day internally.
3 grs. subcutaneously.

Description . . Styptol is prepared by the oxidation of Narcotine and subsequent treatment with Phthalic Acid.

SULPHONAL

Sulphonal

Characters . . A colourless, odourless and almost tasteless crystalline powder, and also in prismatic crystals.
Sparingly soluble in cold water.

Use . . . . Hypnotic for simple insomnia when pain is absent. Being cumulative it is not recommended for continued use, poisoning being fairly frequent.

Dose . . . . 10 to 30 grs. in cachets, hot milk or warm alcoholic drinks.

Description . . Diethylsulphon-dimethyl-methane. A product of the condensation of Acetone with Ethyl Mercaptan.

SULPHUR, ROLL

Sulphur Rotundum

Characters . . Sulphur moulded into thick rolls, and having the characteristic yellow colour.

Use . . . . Used chiefly in the laboratory for fixing tube teeth.

Description . . Prepared by purification from crude native Sulphur.

SYRUP, EASTON'S

Syrupus Ferri Phosphatis cum Quinina et Strychnina

Characters . . A pale yellowish green, syrupy liquid, having a very bitter and acid taste and a strong fluorescence.

Use . . . . General tonic, possessing the combined therapeutic properties of Iron, Quinine and Strychnine. Its administration is indicated in obstinate neuralgia and general debility from all causes.

Dose . . . . $\frac{1}{2}$ to 1 dr. well diluted after food.

Description . . Each fluid drachm contains :—
$\frac{1}{32}$ gr. of Strychnine.
$\frac{4}{5}$ gr. of Quinine Sulphate.

SYRUP OF HYDRIODIC ACID

Syrupus Acidi Hydriodici

Characters . . Faintly straw coloured syrupy liquid, with peculiar taste and flavour of orange.

Use . . . . Recommended as being more active than the alkaline iodides and is indicated in syphilitic affections, especially following prolonged treatment with mercury.

Dose . . . . 20 to 40 minims.

Description . . Contains 1% of Hydriodic Acid (HI). It is made by decomposing an alcoholic solution of Iodine in Syrup by means of sulphuretted hydrogen and is flavoured with orange.

SYRUP OF HYPOPHOSPHITES, COMPOUND
(Fellow's Syrup)

Syrupus Hypophosphitum Compositus

Characters . . A pale yellowish green syrupy liquid having a bitter and slightly acid taste with a strong fluorescence caused by the quinine it contains.

Use . . . . A general tonic, is as a rule better tolerated by the stomach than Easton's syrup which it somewhat closely resembles in its medicinal properties.
Is indicated in debility following neuralgia and allied affections.

Dose . . . . $\frac{1}{2}$ to 1 dr. well diluted after meals.

Description . . Each fluid drachm contains $\frac{1}{160}$gr. of Strychnine; $\frac{1}{8}$ gr. of Quinine Phosphate.

SYRUP OF PHOSPHATES, COMPOUND
(Parrish's Chemical Food)

Syrupus Phosphatis Compositus

Characters . . . A sweet dark red syrupy liquid with slightly metallic taste.

Use . . . . General tonic.
Recommended for its suitability for children and may be given in conjunction with Cod Liver Oil in cases of glandular affections or general weakness.

Dose . . . . ½ to 1 dr. in water directly after food.
Description . . A syrupy solution of the Phosphates of Iron, Potash, Calcium and Sodium.

SYRUP, TRIPLE

Syrupus Triplex

Characters . . A brownish syrupy liquid with a metallic and bitter taste.
Use . . . . General tonic.
Possessing the combined properties of the three syrups of which it is composed.
Dose . . . . ½ to 1 dr. well diluted with water, and taken after meals.
Description . . A mixture of Easton's, Fellow's and Parrish's Syrups.

TABLETS

Tabellæ

Description . . Tablets are made from most drugs and vary in size according to the dose.
They should be crushed before being swallowed, except in cases where the tablet is to be allowed to slowly dissolve in the mouth in order that its effect may be prolonged locally—such as Chlorate of Potash, Formaldehyde, Borax, etc.
Tablets of Aspirin, Antipyrin, Phenalgin, Sulphonal, and allied drugs are especially convenient for travellers.
Hypodermic tablets of Strychnine, Morphia and Apomorphine are standardised for the convenience of practitioners.
Effervescent tablets of Mouth Washes are a convenience, and antiseptic lotions and washes are readily prepared of a uniform strength from tablets.

THYMOL

Thymol

Characters . . Large, colourless, translucent, oblique, rhombic prisms, having a distinctive somewhat agreeable thyme-like odour and a burning aromatic taste.
Soluble in alcohol.
Insoluble in water.
Liquifies when triturated with equal quantities of camphor, menthol, phenol, or chloral.

Use . . . . A powerful antiseptic and deodorant.
Has a preservative action on dead animal tissue, hence its value in Mummifying Pastes, *q.v.*
Has local analgesic properties.
Is largely used in mouth-washes and dentifrices, about 1 gr. to the oz. being a suitable proportion. An alcoholic solution in root treatment is excellent.

Description . . A stearoptene obtained from Volatile Oils of the Thyme and other plants of allied species.

TIN, OXIDE OF (Putty Powder)

Stanni Oxidum

Characters . . A heavy, greyish white powder, without odour, and insoluble in the usual media.

Use . . . . Is recommended for polishing porcelain.

Description . . Occurs native.

TINCTURE OF ACONITE

Tinctura Aconiti

Characters . . A dark brown alcoholic liquid with a peculiar odour and taste.

Use . . . . Anodyne, antipyretic, sedative.
Is a useful application in conjunction

with an equal part of strong Tincture of Iodine to relieve acute pulpitis or periodontitis.
May advantageously be used when mixed with Liniment of Soap in facial neuralgia.

Dose . . . . 2-5 minims.

Description . . Prepared from Aconite root 1 in 10 by percolation with alcohol.

TINCTURE OF ACONITE, FLEMING

Tinctura Aconiti (Fleming)

Characters . . . Resembles Tincture of Aconite, *q.v.*

Use . . . . As Tincture of Aconite, but is a more suitable strength to use for applying to the gums in conjunction with Iodine.

Description . . Prepared from Aconite root by percolation with alcohol.
Approximately the same strength as Liniment of Aconite.

TINCTURE OF BELLADONNA

Tinctura Belladonnæ

Characters . . A dark brown liquid with slight odour and peculiar taste.

Use . . . . Anodyne, analgesic. Depressant to all highly organised tissues, exerting an analgesic and anti-secretory influence. It is useful when mixed with Iodine as an application to the gums in periodontal diseases; and is recommended as an external application either alone or mixed with one of the mild liniments as soap or camphor in facial neuralgia.
This tincture is chiefly dependent for its action on the alkaloid Atropine.

Dose . . . . 5-15 minims.

Description . . Contains ·048 to ·052% of alkaloids, chiefly Atropine.
Prepared from the official liquid extract by dilution with 60% alcohol.

TINCTURE OF CANNABIS INDICA
(Indian Hemp)

Tinctura Cannabis Indicæ

Characters . . A dark green alcoholic solution of peculiar odour, forming a resinous precipitate on its addition to water.

Use . . . . Sedative and anodyne. Recommended in neuralgia, and taken in frequent small doses it tends to ward off further attacks.

Dose . . . . 5 to 15 minims.

Description . . Prepared from Extract of Indian Hemp (1 in 20), which is obtained by maceration from the dried flowering or fruiting tops of the female plants of Cannabis Sativa.

TINCTURE OF DIGITALIS

Tinctura Digitalis

Characters . . A dark spirituous liquid with faint peculiar odour and taste.

Use . . . . A powerful cardiac and circulatory stimulant and tonic.
Should be given with caution as its action is cumulative.
(*Vide* Tincture of Strophanthus).

Dose . . . . 5 to 15 minims.

Description . . Prepared by percolation of Digitalis leaves with 60% Alcohol.

TINCTURE OF GELSEMIUM

Tinctura Gelsemii

Characters . . A clear, light brown spirituous fluid of characteristic odour and taste.

Use . . . . Is said to be a specific in trigeminal neuralgia.
Is recommended to be prescribed in 5 minim doses with 10 grain doses of Citrate of Iron and Quinine.

Dose . . . . 5 to 20 minims.

Description . . Prepared by macerating Gelsemium root in Proof Spirit.

TINCTURE OF HYDRASTIS

Tinctura Hydrastis

Characters . . A clear, light brown spirituous fluid with bitter taste.

Use . . . . Antiseptic, in chronic inflammatory conditions of the mucous membrane and stimulant to ulcers.
Ten drops in a wineglassful of warm water as a mouth-wash three times daily. As a paint 1 part in 4 of glycerine at bedtime.

Description . . Prepared from the standardised liquid extract of Hydrastis Canadensis (Golden Seal).

TINCTURE OF IODINE

Tinctura Iodi Mitis

Characters . . A deep brown spirituous liquid which readily stains the skin and linen.
It has a slight peculiar odour and taste and is miscible with other spirituous preparations, water and glycerine.

Use . . . . Antiseptic, deodorant, disinfectant and vesicant. Internally administered in tuberculosis.
Is recommended as an application to the gum in acute pulpitis and periodontitis; around the necks of the teeth

when scaling; and to suppurating pockets in pyorrhœa alveolaris.
May be introduced into the tissues by Ionisation.
A solution of 1 in 50 makes an excellent lotion for washing out cystic cavities and as a mouth-wash or gargle in ulcerative conditions. It may also be advantageously used in conjunction with Tincture of Aconite or Belladonna in inflammatory and painful conditions. Is recommended as an application to the teeth of children and invalids before and during the operation of cleaning to facilitate the removal of mucoid secretions. Is best applied with aluminium tweezers.

Dose . . . . 2-5 minims.

Description . . A 1 in 40 solution of Iodine in Alcohol, the solution being effected by the aid of Iodide of Potassium.
(Tinctura Iodi Fortis is about 1 in 10 and is recommended where a strong application is advisable).

TINCTURE OF IODINE, DECOLOURISED

Tinctura Iodi Decolorata

Characters . . A clear, colourless solution, usually with an ammoniacal odour.
Tincture of Iodine may also be decolourised with Hyposulphite of Soda, when it is odourless.

Use . . . . . This preparation is practically useless in dental surgery, the free Iodine being replaced by a double salt in the process of decolourising.

Description . . A solution of Ammonium Iodide and Iodate when Liquor Ammonia is, as is most common, used as the decolourising agent.

TINCTURE OF IRON (Steel Drops)

Tinctura Ferri Perchloridi

Characters . . A reddish brown, somewhat spirituous liquid, with a strong styptic taste. Readily miscible with water.

Use . . . . Astringent, tonic, styptic, hæmostatic. Used in passive hæmorrhage. A general tonic during convalescence and useful in anæmias.
Quinine readily dissolves in it and makes a good combination for a tonic in neuralgic affections.

Dose . . . . 5 to 15 minims well diluted.

Description . . Prepared from the official strong Solution of Perchloride of Iron by dilution with water and alcohol.

TINCTURE OF MYRRH

Tinctura Myrrhæ

Characters . . A brownish yellow spirituous liquid, having an agreeable aromatic odour and a bitter acrid taste.

Use . . . . Astringent and antiseptic.
Stimulant to the mucous membrane.
As a mouth-wash with Borax or Chlorate of Potash and a little Glycerine is useful in gingivitis and stomatitis.

Description . . Prepared from Gum Myrrh by maceration and percolation with alcohol.

TINCTURE OF MYRRH AND BORAX

Tinctura Myrrhæ et Boracis

Characters . . A deep brown spirituous solution with a pleasant odour and bitter taste.

Use . . . . A few drops added to a small quantity of warm water makes an excellent mouth-wash, and is a simple, agreeable and efficacious preparation in slight inflammatory conditions of the buccal mucous membrane.

Description . . A mixture of Tincture of Myrrh, Borax and Eau de Cologne.

TINCTURE OF NUX VOMICA

Tinctura Nucis Vomicæ

Characters . . A clear light brown spirituous liquid with faint peculiar odour and marked bitter taste.

Use . . . . A gastric and general tonic. A cardiac and respiratory stimulant.
A valuable ingredient in medicines for chronic constipation, migraine, and general debility.

Dose . . . . 5 to 15 minims.

Description . . Prepared from the official Liquid Extract by dilution with water and 90% alcohol. Contains ·25% of Strychnine.

TINCTURE OF RHATANY

Tinctura Krameriæ

Characters . . A deep brownish yellow liquid with an agreeable odour and astringent taste.

Use . . . . Powerful astringent, due to the peculiar form of Tannic Acid it contains.
May be added to mouth-washes in simple general inflammatory conditions, spongy gums, mercurial and other stomatitic affections.

Description . . Prepared from Rhatany root by percolation with 60% alcohol.

TINCTURE OF STROPHANTHUS

Tinctura Strophanthi

Characters . . A clear spirituous liquid with peculiar odour and bitter taste.

Use . . . . Cardiac tonic.
Useful for promptly stimulating extreme or sudden cases of cardiac failure, and is superior to Digitalis, being non-cumulative in action.

Dose . . . . 2-5 minims.
Description . . Prepared from Strophanthus seeds by percolation with 90% alcohol.

TINCTURE OF TOLU

Tinctura Tolutani

Characters . . A clear light brown spirituous liquid with a pleasant aromatic odour.
Use . . . . To give tenacity to Dental Wax (v. Formulæ).
Expectorant.
Dose . . . . ½-1 fluid drachm.
Description . . Prepared by macerating one part of Balsam of Tolu in 10 of alcohol (90%).

TINCTURE OF WITCH HAZEL

Tinctura Hamamelidis

Characters . . A deep brown spirituous liquid with faint characteristic odour.
Use . . . . Local astringent and hæmostatic.
May be used pure on a pellet of wool. For mouth-washes the Solution of Witch Hazel (*q.v.*) is preferable.
Description . . Prepared from Hamamelis bark by percolation with 45% alcohol.

TRIKRESOL

Trikresol

Characters . . A yellow liquid with a tarry odour.
Use . . . . Disinfectant and antiseptic. In many instances is superior to Phenol. It is valuable for root canal dressings and may be used for stimulating sinuses in alveolar abscesses. Is an ingredient in many preparations for treating putrescent pulp canals.
Description . . A mixture of three isomeric Cresols obtained from Coal Tar.

TRIONAL

Trional

Characters . . A white crystalline powder with a faintly bitter taste.
Sparingly soluble in water, 1 in 12 alcohol.

Use . . . . . A pure hypnotic like Sulphonal, but being more soluble acts more rapidly. Has a tendency to accumulate in the body, and is therefore more poisonous than Sulphonal.

Dose . . . . 10 to 30 grs. in powder or cachet.

Description . . Methyl-Sulphonal.

UREA

Urea

Characters . . Colourless, transparent, almost odourless prismatic crystals, somewhat hygroscopic, and having a cool saline taste.
Readily soluble in water.

Use . . . . . Its salts have been used in conjunction with Quinine as a local anæsthetic, but its indiscriminate use is not recommended.
Employed in medicine as a solvent for uric acid calculi, and as a diuretic.

Dose . . . . 10 to 60 grains.

Description . . Carbamide.
Urea was the first human organic substance to be synthesised by heating Cyanate of Ammonium.

VACCINE

Vaccina

Characters . . A clear, saline fluid usually containing a small percentage of a disinfectant which imparts to it a characteristic odour.

Use . . . . For prophylactic treatment or for chronic or sub-acute infections.
Frequently indicated in general conditions arising from oral sepsis.

Description . . A standardised sterilised emulsion of killed bacteria.
An Autogenous Vaccine is one prepared from the micro-organism or organisms isolated from the patient.
Stock Vaccines may be obtained but are not recommended.
A Detoxicated Vaccine is one from which the poisonous endotoxin has been removed and is said to be far more rapid in action.

VERONAL

Barbitonum

Characters . . Colourless, odourless crystals, or a white crystalline powder with a faintly bitter taste.
Slightly soluble in water.

Use . . . . Hypnotic and sedative, but fails when there is much pain.
It is cumulative in action and should be prescribed with caution.

Dose . . . . 5 to 20 grs. in powder or cachet.

Description . . Diethyl-malonyl-urea.

VITAMINS

Essential elements in natural food, the absence of which causes malnutrition and certain metabolic diseases. Vitamin is an accessory food factor in Cod Liver Oil, Butter, Cream, etc. In orange and lemon juice it is present as an anti-scorbutic principle, whilst fresh vegetables have a definite vitamin value.

WATER, DISTILLED

Aqua Destillata

Characters . . Colourless, tasteless, and odourless liquid.

Use . . . . Used in dispensing, chemical analysis and pharmaceutical preparations.

Description . . Prepared by distilling good spring or tap water.

ZINC CHLORIDE

Zinci Chloridum

Characters . . A white granular powder, fused mass, or sticks.
Very deliquescent, odourless, and having a caustic metallic taste.
Freely soluble in water acidulated with hydrochloric acid and alcohol.

Use . . . . Astringent, antiseptic, disinfectant, caustic and styptic. In form of stick points it may be applied with care to indolent ulcers. Is obtundent to sensitive dentine, but should not be applied too near the pulp. A varnish containing 1 part in 60 parts of Chlorof-Mastich is most useful in cases of abrasion, attrition and erosion.
Is an ingredient of the liquid of Oxychloride cement for filling root canals, etc. As a mouth-wash (grs. 2—1 oz.) is useful after extractions and in conditions of general gingivitis. Its astringent property, however, is not so great as has been considered, and its continued use in the mouth changes the condition of the saliva. A 2% to 5% solution is recommended for ionic medication. A 5% solution may also be used to syringe out offensive pus cavities and sinuses.

Description . . Prepared by the interaction of Zinc and Hydrochloric Acid.

ZINC OXIDE

Zinci Oxidum

Characters . . A fine white amorphous powder without odour or taste.
Insoluble in water and alcohol.

Use . . . . Mild astringent and antiseptic. An ingredient of the powder for Zinc Phosphate cements and many preparations for septic root canal treatment and pulp capping.

Description . . Prepared by the ignition of Carbonate of Zinc and subsequent sublimation.

ZINC SULPHATE

Zinci Sulphas

Characters . . Colourless, transparent, somewhat efflorescent, rhombic or white acicular crystals, or a granular crystalline powder.
Freely soluble in water.

Use . . . . Astringent, styptic, emetic and antiseptic.
A 1% solution is useful in ulcerative stomatitis and cancrum oris.
An ingredient of Oxysulphate of Zinc cement.
A 2 to 5% solution is used for ionic medication.
A saturated solution mixed with Zinc Oxide forms a seal for dressings.

Dose . . . . As an emetic, 10 to 30 grains.

Description . . Prepared by the interaction of Zinc and Sulphuric Acid.

ZINC SULPHOCARBOLATE

Zinci Sulphocarbolas

Characters . . Colourless, odourless, transparent prisms or tabular crystals, having an astringent metallic taste.

Efflorescent and freely soluble in water and alcohol.

Use . . . . Antiseptic and astringent.
A 10% solution is recommended as a stimulating antiseptic for the treatment of pyorrhœa pockets. Four grains to the ounce makes a good mouth-wash in general stomatitis.

Description . . Prepared by saturating a mixture of Carbolic and Sulphuric Acid with Oxide of Zinc.

PART II

THERAPEUTIC TABLE

FOR METHODS OF USE, CHARACTERS, AND OTHER PARTICULAR INFORMATION OF DRUGS INDICATED IN THE FOLLOWING TABLE REFERENCE SHOULD BE MADE TO PART I.

THERAPEUTIC TABLE

CURATIVE AGENTS AND THEIR USE

ABRASION

Milk of Magnesia	Antacid. This condition is frequently painless, treatment by drugs is therefore seldom required. Should the abraided surface, however be sensitive an application of Nitrate of Silver or Zinc Chloride varnish will be found useful.

vide Dentine, Hypersensitive.

ABSCESS

(*a*) Acute Alveolar

Aconite and Iodine	Counter irritant and anodyne. May aid resolution in the early stages.
Hot-water Fomentations with Poppyheads Poultices of Bread, or Fig.	Assist maturation. To be applied in the mouth. Heat and moisture hasten maturation and determine pointing of abscess; assist formation of pus by facilitating the escape of leucocytes and softening the tissues.
Hot Antiseptic Mouth Washes, q.v.	Post-operative, or after spontaneous opening of abscess.
Liquor Plumbi Subacetatis.	Astringent, sedative and protective.
Collodion flexile	To be applied to the skin externally if abscess shows signs of pointing on the face.
Anti-Streptococcal Serum	Procures passive immunity.

(*b*) Chronic (without Sinus)

Solution of Carbolic Acid, 1/200	Antiseptic. To syringe out opened up abscess cavity.
Antiseptic Gauzes	To plug the washed-out cavity and provide drainage.
Solution of Perchloride of Mercury, Alcohol, Cresol, Formaldehyde Solution 40%; Trikreso-formalin	Germicide. To sterilise the root canals of the tooth in relation to the abscess, previous to filling.
Thymol, Essential Oils, Iodoform	Antiseptic.
Ionic Medication	Germicide, and stimulant. By Ionic Medication or Cataphoresis is meant the treatment by electrolytically decomposed drugs. Salts of Zinc, Iodine and Copper are those most frequently employed in dental surgery.

(*c*) Chronic (with Sinus)

Solution of Silver Nitrate 10%	Caustic, astringent
Tincture of Iodine	Irritant, bactericide. To be applied to the sinus track. Nitrate of Silver acts superficially as a caustic, its astringent action limiting its caustic action.
Peroxide of Hydrogen, 20 vols.	Bactericide, stimulant.
Solution of Tri-Chloracetic Acid, 10-20%	To be syringed through the sinus, via the apical foramen of the tooth.
Bismuth Paste	Bactericide, stimulant. To be injected into the sinus after thorough cleansing.
Electric Cautery	Escharotic.
Ionic Medication	Bactericide.

vide also (*b*).

ACID SALIVA

Peroxide of Hydrogen	Mechanical. The Peroxide diluted with water, and used as a mouth-wash, by reason of the bubbling, frees the interproximal spaces from débris. Prophylactic and remedial.
Alkaline Mouth Washes	Antacid.
Milk of Magnesia	Antacid.
Alkaline Tooth Powders and Paste	Antacid. As this condition frequently arises in connection with gastro-intestinal disorders, general treatment may be necessary.

ACTINOMYCOSIS

Iodide of Potassium	Alterative. Said to be a specific when taken internally in large doses, *i.e.*, from 20-60 grs. three times a day.
Solution of Perchloride of Mercury 1/2000.	Antiseptic. For local irrigations.
Solution of Copper Sulphate 1%	Astringent. For local irrigations. Is also given internally in $\frac{1}{4}$ gr. doses, increasing gradually to 1 gr., three times a day.

ANTRUM, SUPPURATION IN (Empyæma Antri)

(*a*) Acute

Normal Saline Solution	Removes mucus. To be used previous to the antiseptic solution.
Solution of Perchloride of Mercury 1/2000	Antiseptic.
Solution of Carbolic Acid 1/200	Antiseptic.

Solution of Boric Acid saturated (1 in 25) — Antiseptic.

The antiseptic solutions are used hot, twice on the first day, and once a day afterwards.

It is useful to vary the antiseptic. The curative agents are to be used only after free opening has been made, and efficient drainage provided.

(*b*) Chronic

As for (*a*) Acute

Bismuth Paste or Gauze — Antiseptic and stimulant.

Vaccine — Produces active immunity.

In stubborn cases autogenous vaccines have been found of service.

ATTRITION

vide Abrasion.

Pain is often present in the tooth. This may be due to the calcareous formations or "pulp-stones" which are frequently found in the pulp tissue.

ACROMEGALY

Pituitary Gland Extract. Thyroid Gland Extract — To supply insufficiency of the internal secretions of these ductless glands.

BREATH, FŒTOR OF

Permanganate of Potash and other Antiseptic Mouth Washes and Gargles — Antiseptic and deodorant.

Treat the local cause, or if due to a general disorder, general treatment should be advised.

Inhalations of Eucalyptol, Menthol and Thymol

BURNS

Glycerine	Diluent and demulcent.
Olive Oil and other Vegetable Oils	Demulcent. For burns caused by drugs, such as Carbolic or Mineral Acids, demulcents and neutralising agents are indicated.
Carron Oil	Demulcent and antiphlogistic.
Bicarbonate of Soda	Neutralising agent.

CALCULUS, DEPOSITS OF (Tartar)

Aromatic Sulphuric Acid, Tri-Chlor Acetic Acid, 25%	Decalcifying agents.
Ammonium Bi-fluoride, Lactic Acid	Especially indicated for removing deposits around the necks of teeth and from the surfaces of the roots.

CARIES OF DENTINE

Silver Nitrate	Coagulant.
Zinc Chloride	Coagulant.
Acid Phosphoric	Coagulant.
Absolute Alcohol	Coagulant and dehydrant.
Essential Oils	Antiseptic. After excavation of the softened dentine, the application of one or other of these drugs will frequently produce a condition of artificial "arrested caries." This should be borne in mind when treating the teeth of children.

CONCUSSION OF TEETH

Tincture of Iodine — Counter irritant.

Iodine and Aconite Tincture — Counter irritant and anodyne.

Capsicum Plaster — Counter irritant.

This treatment is sufficient when the periodontal membrane only is affected. Should the pulp become persistently irritated, its removal may be necessary.

COLLAPSE AFTER HÆMORRHAGE

Normal Saline Solution — Reinstates blood pressure.

Injected intravenously or subcutaneously. The blood pressure is raised by introducing into the circulation a sterile solution, rendered isotonic by the addition of Chloride of Sodium or the combined salts of the blood plasma.

The method of supplying fluid to the body subcutaneously (Hypodermoclysis) is safer than by intravenous injection. Subcutaneous injections are best made in the thigh or abdomen.

Intravenous injections must be made when the case is urgent, and the circulation so feeble that absorption is impossible.

Intravenous injections are best made into the median basilic vein.

vide Shock and Syncope.

CYSTS AND CYSTIC ODONTOMES

Antiseptic Gauze

Bismuth Paste — Bactericide and stimulant.

The treatment is post-operative.

DENTINE, DECALCIFIED

Tannic Acid	Astringent.
Bi-carbonate of Soda	Antacid.
Essential Oils	Antiseptic. In cases of deep carious cavities, where it is deemed expedient, treatment may be employed with a view to preservation of the pulp.
Balsamic Varnishes	Mechanical. Seal the dentinal tubules.

DENTINE, HYPERSENSITIVE

Arsenious Acid	Escharotic.
Chloride of Zinc	Escharotic.
Nitrate of Silver	Escharotic.
Paraform	Escharotic. Escharotics should not be allowed to remain indefinitely in any cavity, otherwise irritation of the pulp will supervene.
Carbolic Acid	Escharotic and anæsthetic.
Cocaine, its Salts and Analogues	Anæsthetic.
Essential Oils	Anodyne.
Absolute Alcohol	Dehydrant. The action of many of the agents used for obtunding sensitive dentine was formerly described as "coagulant," it being believed that sensation was transmitted by the protoplasmic dentinal fibril. In view of the demonstration of nerve fibrils in the dentine, the action of the agents used is described as either escharotic, anodyne or anæsthetic.

Bi-carbonate of Soda	Antacid. Neutralises the irritating acid, the product of bacteria.

DISCOLORATION OF TEETH

Peroxide of Hydrogen and its Analogues	Bleaching agents. Introduced into the cavity and evaporated by means of hot air. A little may be sealed in the cavity.
Aluminium Chloride	Bleaching agent. Moistened with water, and placed in the cavity for five minutes. Syringe out with solution of Bi-carbonate of Soda.
Chlorinated Lime, moistened with Acetic Acid	Bleaching agent. Wash out the cavity with an alkaline solution prior to sealing in the mix.
Sulphurous Acid	Bleaching agent. To be used to swab out the cavity.
Sulphite of Soda, with Boracic Acid	Bleaching agent. Mixed in the proportion of 10 parts to 7 parts respectively and inserted moist in the cavity, SO_2 is liberated.

DISLOCATION OF TEETH

Tincture of Iodine	Counter irritant.
Iodine and Aconite Tincture	Counter irritant and anodyne.
Capsicum Plaster	Counter irritant. Indicated both in cases of partial and total dislocation. After reduction, a splint is usually indicated.

DISLOCATION OF JAW

Rubefacient Liniments	Counter irritants. Treatment by drugs is rarely necessary.

ENAMEL NODULES

Aromatic Sulphuric Acid	Decalcifying agent.
Trichloracetic Acid	Decalcifying agent.
Ammonium Bi-fluoride	Decalcifying agent. This condition rarely calls for treatment.

EROSION

Milk of Magnesia	Antacid. Erosion cavities are usually painful, treatment is similar to that of Hypersensitive Dentine q.v.

EXPOSURE OF PULP, TRAUMATIC

Solution of Boracic Acid, 1.40	Antiseptic. To wash over the exposed surface.
Eugenol, Thymol, or other mild antiseptic, with Zinc Oxide or Zinc Oxysulphate	Antiseptic and protective. The slight irritating action of the mild antiseptic used stimulates the pulp to produce secondary dentine and form its own protective.

FERMENTATION, ACID

Alkaline Mouth Wash	Antacid.
Milk of Magnesia	Antacid. Fermentation of carbo-hydrate food stuffs gives rise to acids in the mouth. Acids in the mouth may, however, also arise from (*a*) eructations from the stomach,

(*b*) altered secretion from the buccal mucous glands, (*c*) foods containing vegetable acids, (*d*) drugs containing either vegetable or mineral acids.

Cream of Tartar — Sialagogue.

FRACTURE OF JAW

Antiseptic Mouth Wash — To clean the mouth before the application of bandages or splints, and whilst the latter are retained in the mouth.

FRACTURE OF TOOTH

vide Dentine, Hypersensitive.
vide Periodontitis, Acute Local.

GINGIVITIS

(*a*) Marginal

Peroxide of Hydrogen — Mechanical and bactericide. May be used as a swab, spray, or mouth-wash.

Tannic Acid — Astringent. May be employed as a paint, mouth-wash, swab, or in powder form.

Tincture of Iodine — Counter irritant and bactericide. A solution made by mixing equal parts of the weak and strong Tinctures of Iodine is recommended.

Solution of Silver Nitrate, 10 grs. to 1 oz. — Astringent. When due to some specific infection, *e.g.*, Gonococcus.

Chlorate of Potash — Stimulant. Used as a mouth-wash, swab, or tooth paste. Its continued use should be avoided.

Astringent Mouth Wash	
Solution of Acid Phenol-Sulphonic, 3%	Antiseptic and stimulant. May be used as a swab, mouth-wash or spray.
Thyroid Extract	Supplies insufficiency of the internal secretion of the gland. Given in cases of mouth breathing due to adenoids in doses of three grains three times a day.

(*b*) Chronic Hypertrophic, General

Solution of Alum, 10 grs. to 1 oz.	Astringent. To be applied after removal of the hypertrophied tissue and subsequent scarification.
Astringent and Antiseptic Mouth Washes generally	

(*c*) Chronic Hypertrophic, Local (Polypus of the Gum)

Potassa cum Calce	Escharotic. The part to be cleansed and dried before applying the escharotic, and the slough cut away when formed.
Solution of Ethylate of Sodium	Escharotic.

(*d*) Chronic, General

Astringent Mouth Wash

(*e*) Chronic Atrophic

Glycerine of Borax and Glycerine of Boric Acid	Mild Antiseptic, stimulant and emollient.

(*f*) Nudata
(as Chronic Atrophic)

Boracic Vaseline, 10%	Both conditions would be more suitably classed under Stomatitis, as other mucous surfaces of the mouth are involved.

GLANDS, INFLAMMATION OF

Locally

Liniment of Iodide of Potassium with Soap	Resolvent.
Glycerine of Belladonna	Resolvent and anodyne.
Liniment of Belladonna	Resolvent and anodyne.
Tincture of Iodine	Resolvent.
Hot Fomentations	Emollient.

The lymphatic glands affected by the gums and teeth are:—

(1) Submaxillary.
(2) Sub-mental.
(3) Parotid.
(4) Superficial cervical.
(5) Deep cervical.

Inflammation may be either acute or chronic and associated with an acute or chronic septic condition in the mouth.

Internally

Mistura Alba	Purgative.
Black Draught	Purgative.

GLOSSITIS

(*a*) Acute Superficial

Chlorate of Potash	Stimulant.
Astringent Mouth Wash	To be used as a mouth-wash.

(*b*) Chronic Superficial

Chlorate of Potash	Stimulant.
Borax	Alkaline antiseptic. To be used as a mouth wash.
Calomel	Antiseptic and stimulant. The powder to be applied to the affected part.
Antiseptic Mouth Wash	Chronic Superficial Glossitis being most frequently caused by a condition of oral sepsis, it is

essential to procure a "clean mouth" as well as to treat the local lesion.

Peroxide of Hydrogen Bactericide.

Iodide of Potassium Alterative.
To be given internally, 5-10 grs. three times a day, particularly when due to syphilis.

(*c*) Acute Parenchymatous

Borax, Boracic Acid Alkaline antiseptic.
May be applied in powder form, or used in solution, as a mouth wash.

Calomel Purgative.

Sulphate of Magnesia Purgative.

GREEN STAIN ON TEETH

Levigated Pumice Powder Abrasive.
It has been said that the green stain is due to the presence in the mouth of chromogenic bacteria. It should be borne in mind, however, that the majority of chromogenic bacteria found in the mouth produce their colouring matter only at a temperature much below that of the body, viz. 22°C.

GUM, BLEEDING OF

Tannic Acid Powder Astringent and styptic.
By this condition is meant the tendency of the gums to ready bleeding. As this is a sign of congestion and an early stage of what may eventually become a Chronic General Periodontitis, or Pyorrhœa Alveolaris, treatment must be consistently carried out.

Astringent Mouth Wash

Chlorate of Potash Tooth Paste Stimulant.

Soluble Tooth Pastes and Massage Creams Antiseptic, astringent.

(*Vide* also Gingivitis Marginal)

GUM, LACERATION OF

Antiseptic Mouth Wash Care should be taken during the extraction of teeth, that injury to the gum be as slight as possible. When the gum has been extensively lacerated, treatment must be prescribed.

Peroxide of Hydrogen Bactericide.

Solution of Phenate of Potash Antiseptic and anodyne.

HARE-LIP

Mild Antiseptic Mouth Wash of Borax or Boracic Acid To keep the mouth clean, owing to inability to feed properly.

HÆMOPHILIA

Calcium Chloride and Lactate Coagulant.
Supplies insufficiency of calcium salts to the blood, which are essential to clotting. Given internally in 10 gr. doses, three times a day.

Adrenalin Vaso-constrictor.

Ergotine Vaso-constrictor.

Extract of Ergot Liquid Vaso-constrictor.
Injected hypodermically or given by the mouth.

Gelatine Coagulant.
Injected hypodermically or applied locally.

Normal Horse Serum	Coagulant. Supplies insufficiency of fibrin ferment.
Thyroid Extract	May act by supplying a substitute for fibrin ferment.
Ovarian Extract	Has been given on account of women being exempt from Hæmophilia. Dose 5-20 grs.

HÆMORRHAGE AFTER DENTAL OPERATION

Astringent Mouth Wash	In the case of a persistent primary hæmorrhage, bleeding can usually be arrested by giving an astringent mouth-wash, and lightly plugging the socket with cotton wool dipped in Tannic Acid. In cases of secondary, or intermediate hæmorrhage, more vigorous treatment must be resorted to, including local styptics, pressure, internal remedies, and possibly surgical methods.
Tannic Acid	Styptic.
Perchloride of Iron solution	Styptic.
Styptol. Stypticine	Styptic.
Adrenalin. Adrenalin Gauze	Vaso-constrictor.
Antiseptic Gauze Plugs	Mechanical.
Hot Water	Styptic.
Cold Water	Styptic.
Internally	
Gallic Acid	Hæmostatic.
Calcium Chloride or Lactate	Coagulant. Indicated when the blood shows no tendency to clot.
Liquid Extract of Ergot	Vaso-constrictor. Indicated when the blood shows a tendency to clot.

Hypodermically

Injection of Ergotine	Vaso-constrictor. Preparations of Ergot should not be given when large vessels are involved, as the muscular contraction would not be sufficient to close the vessels, and the increased arterial pressure caused by the drug would increase the bleeding. N.B.—Not to be given to pregnant women.
Injection of Gelatine	Coagulant. 10 grammes in 1,000 c.cs. 50 c.cs. for a dose, repeated if necessary.
Colloidal Solution of Gum Acacia	5% Solution, to be administered as soon as possible at a moderate rate, and not in too large quantities.

Intravenously

Normal Saline Solution	Reinstates blood pressure. Introduced into the median basilic vein in cases of severe collapse or subcutaneously in less urgent cases.

HYSTERIA

Potassium, Sodium and Ammonium Bromides	Nerve Sedatives.
Tonics	
Purgatives	Hysteria calls for general treatment, and attention to general health.

HYPERSENSITIVE CEMENTUM

Nitrate of Silver	Caustic. On account of the black stain which follows the application of Silver Nitrate, it is preferable to use Chloride of Zinc for teeth in the front of the mouth.
Chloride of Zinc	Caustic.

HYPERSENSITIVE PALATE AND FAUCES

Cocaine, its Salts and Analogues	Anæsthetic. Prior to taking impressions, a paint of a solution of one of the soluble salts, *e.g.*, Coc. Hydrochlor, may be employed with beneficial results.

INFLAMMATION OF THE BUCCAL MUCOUS MEMBRANE

vide Stomatitis.

Inflammation arises from various causes, *e.g.*—

Trauma,
Chemical agents,
Bacteria and their toxins.

A recognition of the cause and its removal is therefore of primary importance.

JAWS, FORCED CLOSURE OF

The condition of forced closure which is usually presented to the dental surgeon is in connection with an acute abscess, q.v., arising from an impacted third lower molar. The products of the inflammation infiltrate the tissues surrounding the joint, and impede its action. It may, however, be due to Hysteria, Diseases of the Joint, Strychnine Poisoning or Tetanus, q.v.

JOINT, TEMPORO-MANDIBULAR, ARTHRITIS

(*a*) Acute

Tincture of Iodine	Counter irritant.
Tincture of Iodine and Aconite	Counter irritant and anodyne.
Rubefacient Liniment	General treatment according to cause.

(*b*) Deformans

Lithia Citrate	Diuretic and solvent. 5-10 grs. 3 times a day.
Salicin	Antipyretic. 5-20 grs. 3 times a day in cachets

(*c*) Rheumatoid Arthritis

Guaiacol and its Salts	Antipyretic and antiseptic. Guaiacol, 1-5 min. 3 times a day, in capsule. Carbonate, 5-10 grs. 3 times a day, in cachet, increasing to 20 grains.
Aspirin	Analgesic. 5-10 grs., when required, in cachet.
Thyroid Extract	To supply insufficiency of thyroid secretion. 2-5 grs. 3 times a day in tablets. This condition is so frequently associated with Pyorrhœa Alveolaris that a knowledge of some of the more usual internal remedies and their doses is advisable.
External remedies as for acute arthritis	
Vaccines	Produce active immunity. The specific micro-organism isolated in Arthritis Deformans is the Strepto-bacillus Malæ (Goadby).
Phylacogen	It is claimed that 80% of the cases treated with Phylacogen have totally recovered.

LEAD POISONING, CHRONIC

Alkaline Mouth Wash	Antacid.
Internally	
Sulphate of Magnesia	Purgative.
Opium Pill	Narcotic.

Potassium Iodide — Alterative.
The presence of a blue line in the gum is a diagnostic sign of chronic lead poisoning. The line is more pronounced in the lower incisor region, the presence of tartar on the teeth accentuating it. The line is absent wherever teeth are missing. Apart from rendering the mouth as aseptic as possible, the treatment lies outside the domain of the dental surgeon.
N.B.—A blue line is also present in Copper and Bismuth poisoning —and may also be simulated by the introduction into the mouth, either accidentally, incidentally to occupation, or intentionally as tooth powders of charcoal, coal dust, soot, etc.

LEUKOPLAKIA

Astringent Mouth Washes
Antiseptic Mouth Washes
Ionic Medication

(*Vide* also Syphilis)

LIPS, INJURY TO

Antiseptic Lotions
Vaseline — Emollient.
Boracic Vaseline, 10% — Antiseptic and emollient.
The injuries, which may probably have to be treated, arise during the extraction of teeth, or by allowing some escharotic to come into contact with the lips.

(*Vide* Burns and Hæmorrhage.)

LUDWIG'S ANGINA

Antiseptic Lotions	
Antiseptic Gauze	
Antistreptococcal Serum	Produces passive immunity. The condition of a diffuse cellulitis arising in connection with the mandibular teeth is occasionally seen and usually ends fatally. It is beyond the domain of a dental surgeon.

NECROSIS OF THE JAW

Hot Poppy Fomentations	Emollient. To be used in the early inflammatory stages after scarification.
Antiseptic Mouth Wash	To be used in all stages.
Carbolic Acid Lotion 1/200	Antiseptic.
Antiseptic Gauze	To be used as an irrigation after connecting up existing sinuses, when the bone is necrosed, free drainage being ensured by means of the antiseptic gauze.
Ionic Medication	Germicide. Has been recommended in the early stages.

Internally

Calomel	Purgative. In the early inflammatory stages.
Sulphate of Magnesia	Purgative. In the early inflammatory stages.
Potassium Iodide	Alterative. To be given in large doses in the early stages.

Opium Pill	Narcotic. To be given when there is great pain. The general health must be supported by means of nutritious and stimulating foods.

NEURALGIA

External	
Chloral and Camphor	Anodyne.
Aconite Tincture or Liniment	Anodyne.
Menthol	Anodyne.
Salicylate of Methyl	Anodyne.
Chloroform	Anodyne. The usual method of employing the various anodynes for the relief of facial neuralgia, is by mixing several together in proper proportions, and gently rubbing the resulting liniment on the painful part, and covering with cotton wool. *E.g.*, Menthol, grs. 30 Tincture of Aconite ℥iv Chloroform ℥iv Ft. Liniment.
Tincture of Iodine	Counter irritant.
Tincture of Capsicum	Counter irritant.
Tincture of Cantharides	Counter irritant.
Hypodermic Injections of Alcohol and Solution of Osmic Acid 1.5%	Analgesics. Five to ten minims are injected at several points in the course of the nerve, and also into the Gasserian ganglion, in Neuralgia Major.
By Cataphoresis	
Alcohol	Anodyne.

Chloroform	The cotton tip of the positive electrode is saturated with a mixture of equal parts of Alcohol and Chloroform or even pure Chloroform, and placed over the affected part.
Internally	
Citrate of Iron and Quinine	
Phosphorous	Tonics. When connected with general debility, overwork or anæmia. Phosphorous is best given in the form of a pill, dose, gr. 1/100.
Tincture of Nux Vomica	
Solution of Strychnine	Tonics. Nux Vomica, and Strychnine are given in small repeated doses.
Tincture of Aconite	Sedative. Recommended in the early stages. Weakens the action of the heart by stimulating the vagus centre and reduces temperature.
Tincture of Gelsemium	Sedative. Depresses the nervous system.
Bromide of Potassium	Sedative. Mixed with Citrate of Caffeine is said to be a specific.
Chloral Hydrate	Hypnotic.
Butyl Chloral Hydrate	Hypnotic. The fifth nerve is said to be specially susceptible to Butyl Chloral Hydrate.
Morphia, and its preparations	Narcotic. Only given in extreme cases.
Iodide of Potassium	Alterative. Useful in cases associated with rheumatism and syphilis.

Phenacetin, Antifebrin, Antipyrin, Pyramidon, Aspirin	Anodynes. Useful in cases of peripheral origin. Frequently given in combination with Citrate of Caffeine, which counteracts the depressant effect usually obtained with drugs of this nature.
Calomel	Purgative. The general health of the patient must be attended to, and any specific cause treated.
Sulphate of Magnesia	Purgative.

ODONTALGIA

Tonics, Antiseptics, Anodynes and Analgesics q.v.	Local and internal treatment according to the origin of the pain.

ORAL SEPSIS

Antiseptic Mouth Washes	Being the forerunner of many serious conditions—both local and general — should receive prompt and energetic treatment according to its etiology.

PAIN

(*a*) After Extraction

Chloretone	Anodyne.
Orthoform	Anodyne.
Carbolic Acid	Escharotic.
Lysol	Escharotic.
Chloride of Zinc	Escharotic.
Antiseptic Gauze	
Antiseptic Mouth Wash	
	In cases of pain arising from suppuration in the tooth socket, syringe out with an antiseptic solution (*e.g.*, Acid Carbolic 1/40), insert any one of these drugs, and plug with gauze.

Orthoform is best used in the form of a paste made with liquid or solid Paraffin. Chloretone is also recommended to be used in a hot aqueous solution. Pure Carbolic Acid or Lysol are useful in cases when owing to incomplete extraction the remaining portion of the tooth contains an exposed pulp.

(*b*) From Erupting Teeth

Ether Anodyne.

Chloroform Anodyne.

Menthol Anodyne.

A mixture of the three drugs has been recommended, a suitable formula being:

Menthol gr. v.
Ether } ℥ii.
Chloroform }
Ft. Pigmentum.

PERIODONTITIS

(*a*) Acute, Local

Tincture of Iodine Counter irritant.

Tincture of Aconite Anodyne.

Capsicum Plaster Counter irritant.

If the inflammation is not caused by bacterial irritation, or bacterial infection does not supervene, the use of counter-irritants will frequently aid resolution.

Rubefacient Liniment Counter irritant.

A rubefacient liniment recommended has the following formula—

Mentholis, grs. 20.
Chloroformi, m. 30.
Tinct. Aconiti ʒvi.
M. Ft. Lin.

(*b*) Acute, General

Hot Fomentations	Emollient.
Antiseptic Mouth Wash	
Calomel	Purgative.
Sulphate of Magnesia	Purgative. This condition is frequently of so serious a nature as to require general treatment according to the cause (*e.g.*, Iodide of Potassium in Syphilis).

(*c*) Chronic, Local

Tincture of Iodine	Counter irritant.
Tincture of Aconite	Anodyne.
Capsicum Plaster	Counter irritant.
	(*vide* also Acute, Local)
Peroxide of Hydrogen	Germicide.
Trichlor-acetic Acid 25%	Stimulant.
Nitrate of Silver	Astringent. In cases arising at the gum margin.
Solution of Carbolic Acid	Antiseptic.
Antiseptic Gauze	After the operation of excision of the apex of a tooth, the cavity should be syringed out with Solution of Carbolic Acid 1.40, and packed with gauze.

(*d*) Chronic, General—Pyorrhœa Alveolaris, Riggs' disease.

Aromatic Sulphuric Acid	Solvent.
Ammonium Bi-fluoride	Solvent. To remove any remaining particles of calculus, which may be inaccessible, after thorough instrumentation.

Peroxide of Hydrogen	Germicide. To syringe out pockets before subsequent treatment, and also as a mouth wash.
Iodine, Tincture of	Germicide. Painted on the gums, or introduced into the pockets.
Copper Sulphate	Germicide, astringent. Introduced into the pockets in the form of powder or paste.
Emetine Hydrochloride	Germicide. A half per cent. solution in normal saline dropped into the pockets.
Paramonochlorophenol	Germicide. Introduced into the pockets gives excellent results.
Tri-Chloracetic Acid 15%	Stimulant. Syringed into the pockets.
Balsam of Peru	Antiseptic and stimulant. The pockets to be filled by means of a suitable syringe.
Bismuth Paste	Stimulant and germicide. Introduced into the pockets by means of a suitable syringe.
Lactic Acid	Stimulant. Used as a paint on the gums, frequently in combination with Carbolic Acid.
Fowler's Solution of Arsenic	Germicide. Usually as a paint.
Chlorate of Potash	Stimulant. May be used as a mouth wash or in the form of a tooth-paste.
Quinine Salts	Stimulant and antiseptic. To be introduced into the pockets after previous injection of Aromatic Sulphuric Acid.

Vaccine	Produces active immunity. Autogenous vaccines only should be used.
Phylacogen	Phylacogens differ from vaccines in that they contain no bacteria, but the products of metabolism, generated by bacteria, grown on culture media.
Antiseptic Mouth Wash	To be prescribed for constant use.
Phenol-Sulphonic Acid 3%	Antiseptic.
Salicylate of Methyl	Antiseptic. To be used as a paint to the dried gums.
Tannic Acid	Astringent. To be applied to the gums, in powder form, or in strong alcoholic solution.
Astringent Mouth Wash	To be prescribed for constant use.
Massage	Induces hyperæmia. There are several methods of obtaining an induced hyperæmia, they are valuable in that by this means excess of anti-bodies are brought into the infected area.
Ionic Medication	Germicide, and stimulant. The chemicals usually employed are solutions of salts of Copper, Zinc, or Iodine, in strengths varying from 2 to 5%..
Drugs for General Treatment	These would include such remedies as saline mixtures and other purgatives, alteratives and diuretics, according to the concomitant symptoms.

PULP, DEVITALISATION OF

Arsenious Acid	Escharotic.
Salts of Cobalt	Escharotic. Cobalt Salts are rarely to be obtained pure, and it is probable that their devitalising property is due to the Arsenic they contain as an impurity.

PULP, EXTIRPATION OF

Cocaine, its Salts and Analogues	Anæsthetic. Usually employed either by pressure or injection, and in combination with Adrenalin or synthetic substitutes for Adrenalin.

PULP, HYPERPLASIA OF

Potassa cum Calce	Escharotic. The part should be clean and dry, and the slough cut away when formed.
Carbolic Acid	Anæsthetic. May be applied previous to excision.
Cocaine and its Analogues	Anæsthetic. May be applied previous to excision.

PULPITIS, ACUTE

Solution and Tincture of Iodine	Counter irritant.
Tincture of Aconite	Anodyne.
Capsicum Plasters	Counter irritant. When due to trauma or injury by physical or chemical agents.
Bicarbonate of Soda	Antacid.
Essential Oils	Antiseptic.

Chloretone — Anodyne.

Pulpitis without exposure in carious teeth is generally caused by irritation due to acids the product of bacteria. The treatment indicated, therefore, is Antacid, followed by Antiseptics, and lining the prepared cavity with a non-conducting and non-irritant antiseptic cement, prior to filling.

PULPITIS, CHRONIC

vide Acute.

Removal of the pulp is usually necessary.

PURPURA

Solution of Perchloride of Iron — Styptic.

Astringent Lotions

Liquid Extract of Ergot — Vaso-constrictor.

The treatment of this condition is beyond the domain of dental surgery.

RHINITIS, ACUTE

Local Applications

Alkaline Nasal Spray — Antacid.

Menthol Vaseline 4 grs. to 1 oz. — Emollient and antiseptic.

Internally

Calomel — Purgative.

Sulphate of Magnesia — Purgative.

Quinine Salts — Tonic and antipyretic.

A Rhinitis may be simply catarrhal or specific. Scarlet fever and influenza are the chief causes of

the specific varieties. Owing to the possibility of the inflammatory condition, spreading to the antrum viâ the "ostium maxillare" it is of importance to the dental surgeon.

ROOT CANALS, SEPTIC

(*a*) Not complicated with Periodontitis

Peroxide of Hydrogen	Germicide. Used as a swab or by means of a syringe.
Solution of Perchloride of Mercury in Alcohol 5%	Germicide. Should be used to wipe out the canals, with cotton wool twisted on a broach.
Essential Oils, Thymol, Iodoform	Antiseptics. Used as temporary dressings, and as ingredients of permanent root-filling preparations.
Sodium and Potassium	Escharotic. The metals, in the proportions of 2 parts of Sodium and 1 part of Potassium, are introduced into the mechanically prepared root canals, by means of an iridio-platinum broach. The mixture forms a soap in combination with the fats of the pulp, and renders adherent albuminous substances soluble. Being powerfully escharotic great care must be observed during its application.
Orthoform	Germicide.

(*b*) Complicated with Periodontitis

Creosote	Germicide.
Cresol	Germicide.
Formalin	Germicide.

Germicide.

Trikreso-formalin — The mixture of Cresol, with Formalin, known as Trikreso-formalin, is claimed to be a specific for putrescent pulp conditions. The strength of the mixture recommended is equal parts of Cresol (Trikresol) and solution of Formaldehyde 40%.

Tincture of Iodine — Counter irritant.

and as for (*a*)

ROOT CANALS, TWISTED, ETC.

Arsenious Acid, Alum, Copper Sulphate, Solution of Formaldehyde, Tannic Acid, Thymol — Mummifying agents.
This relates to a condition in which, by reason of twisted and tortuous roots, it is found to be impossible to remove the whole of the pulp from the root canals. The treatment may be practised also in cases where the condition of the patient renders it impossible or inexpedient to clear the root canals of the pulp.
N.B.—Not to be used in putrescent pulp conditions.

RICKETS

Hypophosphite of Calcium

Hypophosphite of Iron — Tonics.
Usually prescribed in the form of a syrup.

Bone Medulla

Cod Liver Oil — Tonic and nutritive.
Attention to diet is essential, and sea air is to be recommended.

SALIVARY FISTULA

Chromic Acid, pure	Escharotic. Care must be taken in using the pure acid. It will be found convenient to fuse it on to a suitable probe.

SCURVY

Internal

Calomel	Purgative.
Sulphate of Magnesia	Purgative.
Strychnine	Tonic.
Citrate of Iron and Quinine	Tonic.
Arsenic	Alterative.
Lemon Juice	Specific. Purgatives should be given in the early stages and tonics during convalescence.

Local Application

Astringent Mouth Washes	Scurvy produces in the mouth a characteristic spongy condition of the gums, which bleed readily.

SHOCK AFTER TOOTH EXTRACTION

Sal Volatile	Cardiac stimulant. Given by the mouth, one teaspoonful diluted with water.
Strychnine	Cardiac stimulant. Most conveniently given hypodermically as Solution of Strychnine. The dose is from 5-10 minims, but in cases of severe shock as much as 20 minims can be given. It may also be administered by the mouth.

Atropine — Cardiac stimulant.
Injected hypodermically. Dose, gr. 1/60 to 1/50. The addition of 1/150 grain to an injection of Solution of Strychnine is said to increase its effectiveness.

Ether — Cardiac stimulant.
May be injected hypodermically in large doses. (*vide* Syncope).

Adrenalin — Cardiac stimulant and vaso-constrictor.
Best given intravenously, 1 in 40,000 of Normal Saline Solution, 1 in 20,000 may be infused at the rate of 3 to 5 c.cs. per minute, if the patient remains in a dangerous condition.

Pituitary Extract — Cardiac stimulant and vaso-constrictor.
2-4 grains may be given by the mouth, or 1 c.c. injected intramuscularly. It may also be given intravenously in Normal Saline Solution. Elevates systemic arterial pressure by virtue of its peripheral constriction, and simultaneously lowers the pressure in the pulmonary circuit.

Normal Saline Solution — *vide* Collapse.
In cases of shock the patient must be kept in a recumbent position and warmth applied to the extremities.

STOMATITIS

(*a*) Aphthous

Chlorate of Potash — Stimulant.
May be applied in powder form or used as a mouth wash. Care must always be observed in prescribing Chlorate of Potash, ex-

ternally or internally, on account of its destructive action on red blood corpuscles on entering the blood stream.

Boracic Acid — Antiseptic.
As a mouth wash.

Nitrate of Silver — Caustic.
To be applied if the condition is persistent. This condition is usually found in children from 6 to 18 months—rarely in adults. In cattle as "Foot and Mouth Disease."

(*b*) Catarrhal

Astringent Mouth Wash — Frequently given in combination with Chlorate of Potash.

Chlorate of Potash — Stimulant.
Applied locally, also given internally.

Boracic Acid — Antiseptic.
A saturated solution may be given as a mouth wash or may be applied locally in powder form for an adult, 1 part to 8 parts of water, as a mouth wash.

Peroxide of Hydrogen, 20 vols. — Bactericide.
As a swab or a mouth wash.
This condition is frequently found in children during the first dentition, and in exanthematous fevers and gastro-intestinal disturbances. In adults it may be caused by the excessive use of tobacco, spirits, condiments, etc.
Chlorate of Potash in combination with Tinct. Ferri Perchlor. is useful given internally, but with caution to children and to patients suffering from kidney disorders.

(*c*) Follicular

Astringent Mouth Wash

Silver Nitrate — Caustic.
This condition is usually found in children, accompanying gastro-intestinal disturbances, for which general treatment is necessary.

(*d*) Gangrenous

(Cancrum Oris, Noma)

Antiseptic Mouth Washes

Solution of Sulphate of Zinc, 1% — Astringent and antiseptic.
Before applying an escharotic, the part should be thoroughly cleansed with an antiseptic lotion and carefully dried.

Nitric Acid, pure — Escharotic.

Actual Cautery — Escharotic.

Antiseptic Gauze — This condition is found in young, weakly children, existing in unhealthy surroundings.
The prognosis is grave and the health of the patient must be supported by stimulating and nutritious foods.

(*e*) Mercurial

Antiseptic Mouth Wash

Alum Swab — Astringent.

Chlorate of Potash — Stimulant.
As a mouth wash. Also given internally.

Atropine — Checks excessive secretion.
By paralysing the peripheral nerve fibrils, which supply the secretory cells of the glands.
Dose internally, gr. 1/100.

Opium — Narcotic.
Only to be given in extremely painful cases.

Sulphate of Magnesia — Purgative.
Any saline aperient may be given.
Where the condition is due to overdosing, or too prolonged treatment with mercury, the mercurial treatment must be stopped.
During mercurial treatment the mouth must be kept clean, as a dirty mouth, owing to the formation of H_2S, tends to ptyalism.

(*f*) Neurotic

Tincture of Iodine — Counter irritant.

Cocaine — Anæsthetic.
This condition arises in individuals suffering from mental worries. Rest and removal of worries is an essential part of the treatment.

Opium — Narcotic.
Cocaine and opium are only given in cases of severe pain.

(*g*) Parasitic

(1) Saccharomyces Albicans (Thrush)

Solution of Borax — Antiseptic.

Glycerine of Borax — Antiseptic and demulcent.

Honey of Borax — Antiseptic and demulcent.
This condition is found in young children, and occasionally in old people.
In children the infection may frequently be traced to dirty feeding bottles.

Solution of Bicarbonate of Soda — Antacid.
As a mouth wash in 5-10% solution.

Syrup of Rhubarb — Purgative.

(2) Aspergillus Nigrescens

Pyrozone	Germicide. The strength of the solution used is 25%. Pyrozone is a concentrated stable ethereal peroxide of hydrogen.

(*h*) Ulcerative (Membranous)

Peroxide of Hydrogen mouth wash	Germicide. One part of H_2O_2, 20 vols, to 10 parts of water.
Chlorate of Potash mouth wash	Stimulant.
Copper Sulphate	Escharotic. To be applied with care to ulcers.
Zinc Sulphate	Astringent and antiseptic. Most conveniently applied as a 1% solution.
Carbolic Oil	Disinfectant. Applied by means of a wool swab.
Chromic Acid	Escharotic.
Picric Acid	Analgesic, antiseptic. 2-10% on wool.

Internally

Tincture of Perchloride of Iron	Tonic.
Chlorate of Potash	Specific. Usually combined with the Iron in the form of a mixture for internal administration.
Calomel	Purgative.
White Mixture	Purgative. This condition is seen in children and adults who are exposed to unhealthy surroundings, and who

have been badly nurtured. A condition known as Trench Gum amongst troops. Tonics and a nutritious diet, with fresh air, are therefore necessary.

SUPPURATION IN TOOTH SOCKET AFTER EXTRACTION

Solution of Perchloride of Mercury 1-1000	Antiseptic.
Solution of Carbolic Acid 1-40	Antiseptic. The socket to be well irrigated with one or other of the antiseptic lotions.
Chloride of Zinc	Escharotic and germicide. The Chloride of Zinc to be used pure, and a small piece to be placed in the irrigated socket.
Lysol	Lysol should be placed pure in the socket on a piece of wool.
Antiseptic Mouth Wash	To be prescribed for regular use, and also to wash out the socket subsequent to above treatment.
Antiseptic Gauze	To plug the socket when necessary, to prevent the accumulation of debris.

SYNCOPE

Sal Volatile	Cardiac stimulant. Stimulates both the heart, and its accelerator nerves. Its action is transitory.
Brandy	Cardiac stimulant. Not a true stimulant, probably acts by improving the distribution of blood.
Ether	Cardiac stimulant. Injected in large doses. Stimulates the heart and raises the blood pressure by its action on the vaso-motor centres.

SYPHILIS, MANIFESTATIONS IN MOUTH

(*a*) Primary Ulcer

Boric Acid Powder	Antiseptic. To be used in the powder form.
Solution of Perchloride of Mercury 1-2000	Antiseptic.
Chlorate of Potash	Stimulant. To be used as a mouth wash.
Resorcin	Antiseptic. As a paint 5%.

(*b*) Mucous Tubercles

Silver Nitrate	Escharotic.
Copper Sulphate	Escharotic. To be applied pure to the part.
Solution of Chromic Acid, 20%	Escharotic. It frequently happens that Syphilis comes to the notice of the dental surgeon before a general practitioner has been consulted. Care must therefore be taken to diagnose such condition, and general treatment emphatically advised.

(*c*) Tertiary Ulcer

As (*a*) and (*b*).	General treatment—which lies outside the domain of dental surgery—consists of the administration of such drugs as Mercury and Iodide of Potassium by the mouth, or preparation of Arsenic as Salvarsan (606) by intravenous, intramuscular, or subcutaneous injection.

TEETHING OF INFANTS

For local pathological conditions *vide* Stomatitis.

TETANUS

Anti-Tetanic Serum — Antitoxic.
Hypodermic or intravenous injections.

Camphor — Antitoxic.
Hypodermic or intravenous injections.

Bromide of Potassium — Nerve sedative.

Chloral Hydrate — Nerve sedative.
By the mouth or rectum.

TONGUE—ULCERS OF

(*a*) Dental

Silver Nitrate — Escharotic, to be used with due caution.

(*b*) Dyspeptic

Copper Sulphate — Escharotic.

General Treatment

(*c*) Syphilitic (*vide* syphilis)

Chlorate of Potash Mouth Wash — Stimulant.

(*d*) Malignant

Antiseptic Mouth Wash

Astringent Mouth Wash

Potassium Iodide is recommended given internally in obstinate cases and where the predisposing cause is in doubt.

A persistent dental ulcer—due to trauma—in a septic mouth may become malignant, therefore both the traumatic cause and the oral sepsis must be removed.

It is found from statistics that in carcinoma of the tongue there

invariably exists a chronic condition of oral sepsis. Many cases believed to be carcinomatous have cleared up after vigorous remedial and surgical treatment of the oral sepsis.

TONGUE—WOUNDING DURING EXTRACTION

Antiseptic Mouth Wash This condition can always be avoided if due care is taken whilst operating. Should it, however, occur, treatment must be given and prescribed.

vide Hæmorrhage.

VOMITING, POST ANÆSTHETIC

Glucose Checks Acidosis.

Bromide of Potassium. Sedative.

Post anæsthetic vomiting may be avoided by giving either of the remedies previous to the anæsthetic.

CLASSIFICATION AND DEFINITIONS OF REMEDIES

CLASSIFICATION AND DEFINITIONS OF REMEDIES

TABLE A

ALTERATIVE

Derivation . . L. *Alterans*—changing.

Definition . . An agent which changes and corrects morbid conditions and increases metabolism.
e.g., Iodide of Potassium.

ANÆSTHETIC.

Derivation . . Gr. *An*—without.
Gr. *Aisthesis*—sensation.

Definition . . . An agent which produces insensibility or loss of sensation.

Action . . . . **1. Local**

(*a*) Benumbs the part by the cold it produces, *e.g.*, Ethyl Chloride.

(*b*) Paralyses peripheral sensory nerves, *e.g.*, Cocaine.

2. General

Acts on and inhibits nerve centres in the brain, *e.g.*, Nitrous Oxide.

ANALGESIC

Derivation . . Gr. *An*—without.
Gr. *Algos*—pain.

Definition . . . An agent which induces an absence of sensibility to pain.

Action . . . . (1) Direct depressant action on nerve centres, of sensation and perception, *e.g.*, Antipyrin.

(2) Impair conductivity of nerve fibres, *e.g.*, Silver Nitrate.

(3) Inhibit nerve centres in the brain, *e.g.*, Nitrous Oxide.

(4) Applied externally, first stimulate sensory nerve endings, then paralyse them, producing tingling numbness and local analgesia, *e.g.*, Aconite.

(5) *cf.* Hypnotics and Narcotics, *e.g.*, Opium.

ANODYNE

Derivation . . Gr. *An*—without.
Gr. *Odune*—pain.

Definition . . . An agent which produces relief from pain (presupposing the presence of pain)

Action . . . . As for Analgesic, *q.v.*

ANTACID

Derivation . . Gr. *Anti*—opposing.
E. Acid.

Definition . . An agent which neutralises excessive acidity due to the results of morbid processes.
e.g., Bicarbonate of Soda.

ANTIPHLOGISTIC

Derivation . . Gr. *Anti*—opposing.
Gr. *Phlogizein*—to set on fire.

Definition . . An agent which prevents or retards the progress of inflammatory processes, *e.g.*, Aconite.
Contra-indicated where the vitality of tissue is impaired by previous diseased conditions.

ANTIPYRETIC

Derivation . . Gr. *Anti*—opposing.
Gr. *Paretos*—feverish.

Definition . . An agent which reduces body temperature.

Action . . . . (1) Lessen heat production.
Reduce the circulation and diminish tissue change, *e.g.*, Quinine.

(2) Promote heat loss.

(*a*) Dilate arterioles and promote perspiration, *e.g.*, Spirit of Nitrous Ether.

(*b*) Abstract heat from the body, *e.g.*, Wet Pack.

ANTISEPTIC

Derivation . . Gr. *Anti*—opposing.
Gr. *Septikos*—putrefactive.

Definition . . An agent which prevents or retards decomposition by (1) arresting development of bacteria that produce it, *e.g.*, Carbolic Acid, or (2) rendering inocuous the toxic products of their metabolism, or retarding or hindering the absorption of such products, *e.g.*, Iodoform.
N.B.—Antiseptics, strictly speaking, need not necessarily have the power of destroying micro-organisms.
cf. Germicides.

ANTI-TOXIN

Derivation . . Gr. *Anti*—opposing.
Gr. *Toxicon*—poison.

Definition . . An agent which, when injected into a human subject, increases the number of anti-bodies in the blood. These anti-bodies or " receptors " unite with the toxins present, and bring about a condition of acquired passive immunity.

An Antitoxic Serum is serum obtained, and standardised, under aseptic conditions, from an animal (*e.g.*, horse) which has been rendered actively immune against a specific bacterium or its toxic products, *e.g.*, Anti-Diphtheritic Serum.
cf. Vaccine.

ASTRINGENT

Derivation . . L. *ad*—to.
L. *Stringere*—to bind.

Definition . . An agent which contracts and condenses tissue and lessens secretion from mucous surfaces.

Action . . . . (1) By coagulation or precipitation of albumin and gelatine, *e.g.*, Tannic Acid.

(2) By making tissues more dense by concentration, *e.g.*, Alum.

(3) By direct action on secreting cells, *e.g.*, Chloride of Zinc.

(4) Remotely, by acting on internal organs through the blood, *e.g.*, Gallic Acid.

Astringents generally possess irritant properties. Some of them are, however, markedly sedative, and may therefore be applied to acute inflammatory areas, *e.g.*, Silver Nitrate, Acetate or Sub-acetate of Lead; Sub-carbonate or Sub-nitrate of Bismuth.

CARDIANT

Derivation . . Gr. *Kardia*—heart.

Definition . . An agent which affects the action of the heart.

Action . . . . (1) Sedatives: Lower arterial pressure, *e.g.*, Aconite.
(2) Stimulants: Increase arterial pressure, *e.g.*, Ammonia.

CATHARTIC

Derivation . . Gr. *Kathartikos*—cleansing.
Vide Purgative.

CAUSTIC

Derivation . . Gr. *Kaustikos*—burning.
Vide Escharotic.

CAUTERY

Derivation . . Gr. *Kauterion*—a branding iron.
Definition . . A term formerly applied to caustics, but more recently to the platinum wire, heated by an electric current.
Action . . . . (*a*) Bright red to a white heat, as a counter-irritant, and for the destruction of tissue.
(*b*) Not exceeding a dull cherry red colour as a hæmostatic.
E.g., Paquelin's Cautery.

CHOLAGOGUE

Derivation . . . Gr. *Cholos*—bile.
Gr. *Agogos*—a leader.
Definition . . An agent which stimulates the flow of bile and produces free purgation at the same time.
Action . . . . (*a*) Indirectly, by stimulating the duodenum and upper part of the jejunum, *e.g.*, Calomel.
(*b*) Directly, by acting on the liver cells, *e.g.*, Podophyllin.

COUNTER-IRRITANT

Derivation . . L. *Contra*—against.
L. *Irritans*—exciting.

Definition . . An agent which relieves pain, reduces inflammation, or accelerates absorption at a spot remote from the disordered area, but having nervous or vascular communication with it—relief being occasioned by reflex nervous action.

Action . . . . (1) Rubefacients—produce local hyperæmia, *e.g.*, Iodine.
(2) Epispastics—produce a blister, *e.g.*, Cantharides.
(3) Escharotics—destroy tissue, *e.g.*, Chromic Acid.

DECALCIFYING AGENT

Derivation . . L. *De*—removal.
L. *Calce*—lime.
L. *Facere*—to make.

Definition . . An agent which by chemical inter-action removes calcific salts from a hard tissue. *E.g.*, Aromatic Sulphuric Acid.
cf. Histological Tables.

DEMULCENT

Derivation . . L. *De*—removal.
L. *Mulcere*—to stroke.

Definition . . An agent which protects and allays irritation of the mucous membranes. *e.g.*, Olive Oil.
cf. Emollients, between which and demulcents no hard and fast distinction can be made.

DIAPHORETIC

Derivation . . Gr. *Dia*—through.
Gr. *Phoreein*—to carry.

Definition . . An agent which produces free perspiration.

Action . . . . (1) Stimulate the sweat glands by acting on centres, *e.g.*, Pilocarpine.
(2) Dilate the superficial capillaries, *e.g.*, Dover's Powder.
(3) As (2) and increase body temperature, *e.g.*, Turkish Bath.

DISINFECTANT

(Bactericide, Germicide)

Derivation . . L. *Dis*—reversing.
L. *In*—into.
L. *Facere*—to make.

Definition . . An agent which renders free from infection by destroying putrefactive and other micro-organisms (and spores) and the products of their metabolism.

Action . . . . (1) By absorbing the products of putrefaction, *e.g.*, Charcoal.
(2) By taking up water, *e.g.*, Quick *Lime*.
(3) By taking up Hydrogen from water and liberating Oxygen, *e.g.*, Chlorine.
(4) By giving out Oxygen directly, *e.g.*, Peroxide of Hydrogen.
(5) By withdrawing Oxygen, *e.g.*, SO_2.
(6) By directly acting on bacteria, *e.g.*, Perchloride of Mercury.
cf. Antiseptics.

DIURETIC

Derivation . . Gr. *Dia*—through.
Gr. *Ouron*—urine.

Definition . . An agent which produces an increased flow of urine.

Action . . . . (1) Stimulates renal epithelium, *e.g.*, Caffeine.

(2) Increases blood pressure, *e.g.*, Digitalis.

(3) Forms compounds readily eliminated, *e.g.*, Vegetable Salts of Potash.

EMETIC

Derivation . . Gr. *Emesis*—vomiting.

Definition . . An agent which produces vomiting.

Action . . . . (1) Reflex :—Irritates the nerve end organs of the pharyngeal, œsophageal or gastric nerves, *e.g.*, Copper Sulphate.

(2) Direct :—Through the circulation and thus stimulating the vomiting centre in the medulla, *e.g.*, Apomorphine.

EMMENAGOGUE

Derivation . . Gr. *En*—in.
Gr. *Men*—month.
Gr. *Agogein*—to lead.

Definition . . An agent which restores menstrual function.

Action . . . . (1) Indirectly—by tonic action on the general system, *e.g.*, Iron Salts.

(2) Directly—by local stimulation, *e.g.*, Ergot.

N.B.—Ergot in large doses produces labour. *cf.* Use in Hæmorrhage.

EMOLLIENT

Derivation . . L. *E.*—out.
L. *Mollis*—soft.

Definition . . An agent which softens and relaxes the tissues, *e.g.*, Glycerine.
cf. Demulcents.

ESCHAROTIC

Derivation . . Gr. *Eschara*—fireplace.

Definition . . An agent which disorganises or destroys living tissue.

Action . . . . (1) Abstract water from the tissue, *e.g.*, Arsenious Acid.
(2) Combine with the albumin in the tissue, *e.g.*, Silver Nitrate.
(3) By corrosive action, *e.g.*, Chromic Acid.

HÆMOSTATIC

Derivation . . Gr. *Hæmia*—blood.
Gr. *Statikos*—causing to stand still.

Definition . . An agent which arrests the flow of blood.

Action . . . . (1) Pressure, *e.g.*, Plugs, ligatures.
(2) By astringent action, *e.g.*, Gallic Acid.
(3) By constricting the arterioles, *e.g.*, Adrenalin.
(4) By increasing the coagulability of the blood by introducing into it a deficiency, *e.g.*, Calcium Lactate.

HYPNOTIC

Derivation . . Gr. *Hupnos*—sleep.
Gr. *Osis*—state of.

Definition . . An agent which produces sleep.
Hypnotics are given where the insomnia is purely functional and not due to pain, *e.g.*, Chloral Hydrate.
cf. Narcotics.

NARCOTIC

Hypno-Narcotics

Derivation . . Gr. *Narkœin*—to benumb.

Definition . . An agent which relieves pain and produces sleep, *e.g.*, Opium.

cf. Hypnotics.

NERVOUS SEDATIVE

Derivation . . L. *Sedare*—to appease.

Definition . . An agent which reduces the functional activity of the nerves.

E.g., Bromide of Potassium.

NERVOUS STIMULANT

Derivation . . L. *Stimulus*—a goad.

Definition . . An agent which increases the functional activity of the nerves, *e.g.*, Caffeine.

Action . . . . In large doses causes exhaustion, and acts as sedative.

PURGATIVE

Derivation . . L. *Purgare*—to empty.

Definition . . An agent which produces evacuation from the bowels.

Action . . . . (1) *Laxatives*—Non-irritating and produce slight peristaltic action, *e.g.*, Cascara.

(2) *Cathartics*—Produce a decided positive action, with some irritation and griping, *e.g.*, Sulphate of Magnesia.

(3) *Drastics*—Produce violent action, with griping and much irritation, *e.g.*, Croton Oil.

REVULSIVE

Derivation . . L. *Re*—back.
L. *Vulsis*—a plucking.

Definition . . An agent which causes withdrawal of blood from a congested area to a remote area, *e.g.*, Black Draught.
For this reason purgatives are prescribed in cases of acute alveolar abscess, &c.
cf. Counter-irritants.

RUBEFACIENT

Derivation . . L. *Ruber*—red.
L. *Facere*—to make.

Definition . . An agent which produces redness of the skin, *e.g.*, Capsicum.
cf. Counter-irritants.

SIALAGOGUE

Derivation . . Gr. *Sialon*—saliva.
Gr. *Agogos*—a leader.

Definition . . An agent which produces an increased flow of saliva, *e.g.*, Cream of Tartar.

Action . . . . By increasing the flow of saliva, which has a marked alkaline reaction, certain sialagogues may be employed as antacids.

SPECIFIC

Derivation . . E. *Species*.
L. *Facere*—to make.

Definition . . An agent which has a direct curative action on certain " specific " diseases. *e.g.*, Chlorate of Potash.
Little is known at present as to the mode of action of " specifics."

STYPTIC

Derivation . . Gr. *Stuphein*—to constrict.

Definition . . An agent which constricts blood vessels and arrests hæmorrhage.

cf. Astringents—Styptics are markedly astringent, *e.g.*, Tannic Acid.

cf. Hæmostatics—Styptics are described as local hæmostatics, *e.g.*, Tannic Acid.

TONIC

Derivation . . E. *Tone.*
Gr. *Tonos*—to stretch.

Definition . . An agent which promotes activity of the various organs, and gives "tone" to the general system.
By "tone" is meant a condition or state habitual to healthy muscular and other tissues intermediate between complete relaxation, and the contraction produced in doing work. Hence a state of normal vigour of any part.

Action . . . . Stomachic, Digestive, Intestinal tonics increase the tone of the stomach and intestines, *e.g.*, Cinchona.
Hæmatic, increase the tone of the blood, *e.g.*, Iron Salts.
Vascular, increase the tone of the blood vessels, *e.g.*, Ergot.
Cardiac, increase the tone of the heart, *e.g.*, Strychnine.
Nervine, increase the tone of the nerves, *e.g.*, Phosphorus.
General, increase the tone of the whole system, *e.g.*, Fresh Air.

VACCINE

Derivation . . L. *Vacca*—a cow.

Definition . . A standardised sterile emulsion of killed bacteria, which when injected into the human subject produces a condition of active immunity.

Varieties—

(1) *Stock*—Prepared from a subject other than the one under treatment.

(2) *Autogenous* — Prepared from the subject under treatment.

(3) *Pure*—An emulsion of one variety of bacterium only.

(4) *Mixed*—An emulsion of more than one variety of bacterium.

E.g., Vaccines for Pyorrhœa Alveolaris and its sequelæ.

VASO-MOTOR AGENT

Derivation . . L. *Vas*—a vessel.
L. *Motio*—I move.

Definition . . An agent which influences the movements of the walls of the blood vessels.

Action . . . . (1) *Dilators*—Which dilate the blood vessels, *e.g.*, Amyl Nitrite.
(2) *Constrictors*—Which constrict the blood vessels, *e.g.*, Adrenalin.

CLASSIFICATION OF DRUGS AND REMEDIES

TABLE B

Not exhaustive nor arbitrary, but those mainly in use in Dental Practice.

Alteratives . . Iodide of Potassium.
Salts of Iron.
Salts of Mercury.

Anæsthetics . . 1. *Local*—
Alypin.
Apothesine.
Butyn.
Cocaine Hydrochloride.
Cocaine Lactate.
Erythrophlœine.
Ethyl Chloride.
Eucaine and Salts.
Novocain.
Essential Oils.
Carbolic Acid.
Creosote.

2. *General*—
Nitrous Oxide Gas.
Chloroform.
Ethanesal.
Ether.
Ethyl Chloride.

Antacids . . . Bi-carbonate of Soda.
Carbonate of Calcium.
Carbonate of Lithia.
Carbonate of Magnesia.
Carbonate of Potash.
Carbonate of Soda.
Milk of Magnesia.

Antiphlogistics . Aconite.
Mercury.
Opium.
Gelsemium.

Analgesics and Anodynes . . Aconite.
Antifebrin.
Antipyrin.
Camphor Chloral.
Carbolic Acid.
Essential Oils.
Menthol.
Phenacetin.
Picric Acid.
Pyramidon.
Silver Nitrate.

Antipyretics . 1. *Lessen heat production.*
Aconite.
Antifebrin.
Antipyrin.
Aspirin
Digitalis.
Guaiacol.
Quinine.
Salicin.
Salicylate of Soda.
Salol.

2. *Promote heat loss.*
Spirit of Nitrous Ether.
Cold Water.
Wet Pack.

Antiseptics . . Acetozone.
Acriflavine.
Alcohol.
Benzoic Acid.
Borax.
Boric Acid.
Carbolic Acid.
Chinosol.
Chlorine Solution.
Creosote.
Cresol.

Dakin's Solution.
Di-Iodoform.
Essential Oils.
Eucalyptol.
Iodine, Iodides.
Iodoform.
Lysol.
Menthol.
Mercury, Salts of.
Methyl Salicylate.
Orthoform.
Paraform.
Paramonochlorphenol.
Permanganate of Potash.
Peroxide of Hydrogen.
Picric Acid.
Resorcin.
Salol.

Astringents . . Alum.
Bismuth, Salts of.
Copper Sulphate.
Gallic Acid.
Iron, Perchloride of.
Lead Acetate.
Lead Sub-Acetate.
Myrrh, Tincture of.
Rhatany, Tincture of.
Silver Nitrate.
Tannic Acid.
Trichloracetic Acid.
Zinc Chloride.
Zinc Sulphate.

Cardiants . . . *Sedatives.*
Aconite.
Hydrocyanic Acid.
Stimulants.
Alcohol.
Ammonia.
Amyl Nitrite.
Caffeine Citrate.
Digitalis.
Ether.

	Strophanthus.
	Strychnine.
Counter-Irritants.	*Rubefacients.*
	Capsicum.
	Chloroform.
	Eucalyptol.
	Iodine.
	Menthol.
	Turpentine.
	Epispastics.
	Acetic Acid, Glacial.
	Ammonia.
	Cantharides.
	Escharotics.
	Arsenic.
	Carbolic Acid.
	Cautery.
	Chloride of Zinc.
	Chromic Acid.
	Nitric Acid.
	Potassa cum Calce.
	Silver Nitrate.
	Trichloracetic Acid.
Cholagogues.	Aloes.
	Calomel.
	Podophyllin.
Decalcifying Agents	Ammonium Bifluoride.
	Hydrochloric Acid.
	Lactic Acid.
	Nitric Acid.
	Sulphuric Acid.
	Trichloracetic Acid.
Demulcents and Emolients	Borax and Honey.
	Cold Cream.
	Glycerine.
	Hot Fomentations.
	Olive Oil.
	Poultices.
	White of Egg.

Diaphoretics . . Ipecacuanha.
Pilocarpine.
Salicylates.
Spirit of Nitrous Ether.
Turkish Bath.

Disinfectants . . Acriflavine.
Carbolic Acid.
Chloride of Zinc.
Chlorine.
Cresol.
Formaldehyde.
Heat.
Lysol.
Mercurochrome.
Mercury, Salts of.
Paraform.
Paramonochlorphenol.
Sunlight.

Sterilisation is the process of destroying micro-organisms or germs by means of one or other of these agents.

Instruments are best sterilised by:—

(*a*) dry heat, *e.g.*, bunsen flame.
(*b*) moist heat, *e.g.*, steam or boiling distilled water.

Dressings are best rendered aseptic by chemical disinfectants or heated air.

Diuretics . . . Caffeine.
Lithia, Salts of.
Potash, Salts of.

Emetics . . . *Direct.*
Apomorphine.
Emetine.
Ipecacuanha.

Indirect.
Alum.
Copper Sulphate.
Mustard.
Salt.
Zinc Sulphate.

Hæmostatics . .	Adrenaline. Calcium Chloride. Calcium Lactate. Cold. Ergot. Gallic Acid. Heat. Turpentine. (*v. Astringents*).
Hypnotics. .	Bromides. Chloral Hydrate. Chloralamide. Chloretone. Paraldehyde. Sulphonal. Trional. Veronal.
Narcotics . . .	Chloral Hydrate. Codeine. Morphia. Opium.
Nerve Sedatives	Antifebrin. Antipyrin. Belladonna. Bromides. Butyl Chloral Hydrate Camphor. Chloral Hydrate. Gelsemium. Opium. Phenacetin.
Nerve Stimulants. .	Caffeine. Coca. Strychnine.
Purgatives . .	Aloes. Calomel. Castor Oil. Croton Oil. Jalap.

Magnesium Sulphate.
Podophyllin.
Rhubarb.
Senna.
Sodium Sulphate.

Sialogogues . . Cream of Tartar.
Dilute Acids.
Iodides.
Mercury, Salts of.
Pilocarpine.

Tonics . . . Acids, dilute mineral.
Arsenic.
Cinchona.
Digitalis.
Gentian.
Iron, Salts of.
Nux Vomica.
Phosphorus.
Quinine.
Strychnine.

Vaso-Motor Dilators . . Aconite.
Amyl Nitrite.
Nitroglycerine.

Vaso-Motor Constrictors . Adrenalin.
Digitalis.
Ergot.
Strychnine.

PART III

PRESCRIBING

INCLUDING DEFINITIONS OF PHARMACOPŒIA PREPARATIONS, INSTRUCTIONS ON HOW TO WRITE A PRESCRIPTION, AND SOME TYPICAL FORMULÆ.

The British Pharmacopœia is a book containing a description of the more important drugs, and their preparations together with much information of importance to prescriber and dispenser.

It is issued by the General Medical Council and is therefore the official authority for ensuring the purity of medicines supplied to the public.

The following are the different kinds of preparations contained in the British Pharmacopœia.

Acetum—a Vinegar—a solution of a drug or its active principle in acetic acid; *e.g.*, Ipecac Vinegar.

Aqua—a Water—a weak solution of a medicinal substance in water; *e.g.*, Peppermint, chloroform, and rose water.

Collodium—a Collodion—a solution of pyroxylin (gun-cotton) alone or with other substances in an ethereal liquid; *e.g.*, Flexile Collodion.

Confectio—a Confection—a soft preparation, resembling jam, in which medicinal substances are mixed with sugar or honey; *e.g.*, Confection of Senna.

Decoctum—a Decoction—a preparation obtained by boiling a vegetable substance in water and straining the product; *e.g.*, Decoction of Aloes.

Emplastrum—a Plaster—soap, oil or resin mixed together by heat, and to which active substances may be added; *e.g.*, Belladonna or Capsicum Plaster.

Extractum—an Extract—a concentrated and standardised preparation of a drug or drugs, as Extract of Ergot. It may be dry, fluid or solid.

Glycerinum—a Glycerine—a solution of a drug in glycerine with or without the addition of water; *e.g.*, Glycerine of Tannin.

Infusum—an Infusion—a preparation obtained by pouring boiling, hot or cold water on to a vegetable substance and allowing it to stand in a covered vessel for a definite period of time; *e.g.*, Infusion of Gentian.

Injectio Hypodermica—a Hypodermic Injection—a solution of a powerful drug for subcutaneous administration; *e.g.*, Hypodermic Injection of Strychnine.

Lamellae—Discs—thin minute plates of gelatine and glycerine, variously medicated with alkaloids, for introduction into the eye, *e.g.*, Cocaine Discs.

Linimentum—a Liniment—a preparation for external application by rubbing or painting; *e.g.*, Turpentine Liniment.

Liquor—a Solution—a preparation of a substance other than a volatile oil in various solvents; *e.g.*, Fowler's Solution of Arsenic.

Lotio—a Lotion—a solution or mixture for external application on lint or as a wash; *e.g.*, Lead Lotion.

Mistura—a Mixture—a preparation of various substances, either dissolved or suspended in water; *e.g.*, White Mixture.

Mucilago—a Mucilage—a solution of a gum; *e.g.*, Acacia Mucilage.

Oleum—an Oil—a solution of a drug in a fixed oil; *e.g.*, Phosphorous Oil.

Oxymel—an Oxymel—a preparation of honey, water, and acetic acid, to which may be added a medicinal substance, *e.g.*, Oxymel of Squills.

Pilula—a Pill—various extracts, powders or other active substances mixed together with a suitable excipient and the resulting mass rolled into spheres of a definite dose; *e.g.*, Opium Pill.

Pulvis—a Powder—an intimate mixture of finely sifted substances; *e.g.*, Compound Rhubarb Powder.

Spiritus—a Spirit—solution of a volatile oil or other medicinal substance in alcohol; *e.g.*, Spirits of Chloroform.

Succus—a Juice—the expressed fluid of a fresh plant to which alcohol is added as a preservative; *e.g.*, Dandelion Juice.

Suppositorium—a Suppository—conical solid masses of cocoa butter or gelatine to which one or more active substances may be added; *e.g.*, Morphia Suppository.

Syrupus—a Syrup—a solution of sugar in which various medicinal substances or flavouring agents may be incorporated; *e.g.*, Compound Syrup of Hypophosphites.

Tabella—a Tablet—compressed masses of drugs, with or without the addition of an inert powder to ensure a definite dose; *e.g.*, Aspirin Tablets.

Tinctura—a Tincture—a solution of active substances in alcohol or a mixture of alcohol and other solvents; *e.g.*, Tincture of Iodine.

Trochiscus—a Lozenge—a dry tablet of uniform dose, prepared by the incorporation of a medicinal substance in some palatable base; *e.g.*, Chlorate of Potash Lozenge.

Unguentum—an Ointment—a mixture of an active substance with lard, lanolin, vaseline or other suitable base; *e.g.*, Boracic Ointment.

Vinum—a Wine—a solution of a drug in sherry, orange or other wine; *e.g.*, Ipecacuanha Wine.

Drugs and preparations of considerable value described in other works are known as **unofficial** as distinct from those of the British Pharmacopœia, which are known as **official.**

PRESCRIBING

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(1) Prescription Writing.
(2) Weights and Measures.
(3) Doses.
(4) Solubilities.
(5) Incompatibles.
(6) Poisons and Antidotes.

PRESCRIPTION WRITING

By a prescription (pre—before, scribo—I write) is meant the written directions for the preparation and use of remedies.

The various parts of a prescription are:—

(*a*) The Heading or Sign.
(*b*) The Ingredients, and quantities.
(*c*) The Directions to the Pharmacist.
(*d*) The Directions to the Patient.
(*e*) The Signature of the Prescriber.
(*f*) The Name of the Patient.
(*g*) The Date.

EXAMPLE.

(*f*)	Name of the Patient ...	Mrs. Brown.
(*a*)	Heading or Sign	℞*.
(*b*)	Ingredients and quantities	Magnesii Sulphatis ʒvi Magnesii Carhonatis Ponderosæ ʒi Aquæ Menthæ Piperitæ ad ℥vi
(*c*)	Directions to the Pharmacist	Misce fiat Mistura et signetur.
(*d*)	Directions to the Patient ...	A sixth part to be taken twice daily before meals.
(*g*)	Date	*Mar. 1, 1923.*
(*e*)	Signature of Prescriber ...	W. A. B.

Points to be borne in mind when writing a prescription:—

(1) Writing to be clear and legible.

(2) No ambiguous abbreviations must be used or errors may result.

EXAMPLE. Hyd. Chlor. may mean:
Perchloride of Mercury.
Subchloride of Mercury.
Chloral Hydrate.

(3) It is preferable to designate ingredients by their Latin names, which are understood throughout the civilised world.

*℞ is a modification of the ancient ♃, being an invocation to Jupiter. It is now understood to be the first letter of the Latin word Recipe=Take thou.

(4) The Latin names of ingredients are in the Genitive case, the quantities in the Accusative (governed by R), but it is not usual to write these in full.

EXAMPLE.

Recipe, Magnesii Sulphatis drachmas sex.

Take (of) Sulphate of Magnesia six drachms.

R. Mag: Sulph: ʒvi

(5) Directions to the Pharmacist should be written in Latin.

EXAMPLE.

Misce fiat Mistura, et signetur.

Mix, let a mixture be made and let it be labelled.

(6) Directions to the patient are preferably written in English, and should be both clear and concise.

(7) It is usual to sign one's initials only to a prescription, except when prescribing for a member of a royal family, when it is etiquette to sign the name in full.

AN ABRIDGED LIST OF WORDS AND TERMS

WITH THEIR ENGLISH MEANINGS,

USED IN PRESCRIPTION WRITING, TOGETHER WITH THEIR USUAL FORMS OF ABBREVIATIONS.

aa, ana	... of each (ingredient)
ad	... to or up to
adde	... add thou
ante	... before
aq., aqua	... water
aq. dest., aqua destillata	... distilled water
aq. ferv., aqua fervens	... hot water
aq. font., aqua fontana	... spring water
aq. gel., aqua gelidus	... cold water

balneum	a bath
B.P.	British Pharmacopœia
b.i.d., bis in die	twice a day
c. m. s., cras mane sumendus	to be taken to-morrow morning
c. n., cras nocte	to-morrow night
cap., capiat	let (the patient) take
cataplasma	a poultice
charta	a paper (a powder in paper)
co., compositus	compound
coch., cochleare	a spoonful
coch. mag., cochleare magnum	a tablespoonful (about 4 fluid drachms)
coch. med., cochleare medium	a dessertspoonful (about 2 fluid drachms)
coch. parv., cochleare parvum	a teaspoonful (about 1 fluid drachm)
cong., congius	a gallon
collut., collutorium	a mouth wash
cyath., cyathus	a wineglass
detur...	let it be given
d.t.d. dentur tales doses ...	let such doses be given
dosis	a dose
emeticum	an emetic
emp., emplastrum	a plaster
ext., extractum	an extract
f. or ft., fiat or fiant ...	let it (or let them) be made
f. haust., fiat haustus ...	let a draught be made
f.s.a., fiat secundum artem ...	let it be made according to art
fl., fluidus	fluid
gargarisma	a gargle
gr., granum	a grain
gtt. gutta or guttæ	a drop or drops
h.s., hora somni	at bed-time
haust., haustus	a draught
inj., injectio	an injection

lin., linimentum ... ... a liniment
liq., liquor v. liquidum ... a liquor or liquid
lot., lotio ... ... a lotion
m.b., misce bene ... ... mix well
m. dict., more dictu ... ... as directed
mane ... ... in the morning
mane pr., mane primo ... early or first thing in the morning
min., minimum ... ... a minim
misce ... ... mix thou
mist., mistura ... ... a mixture
nocte ... ... at night
no., numero ... ... in number
o., octavius ... ... a pint
o.m., omni mane ... ... every morning
o.n., omni nocte ... ... every night
omn. hor., omni hora ... every hour
p.r.n., pro re nata ... ... occasionally
p. æq., partes æquales ... equal parts
pil., pilula ... ... a pill
pulv. (1) pulvis ... ... a powder
(2) pulverisatus ... powdered
q.q.h., quaque quatuor horæ every four hours
q.s., quantum sufficit ... as much as is sufficient
rep., repetatur v. repetantur... let it (or them) be repeated
s.o.s., si opus sit ... ... if necessary
ss., semis v. semissis ... half
sig., signetur... ... ... let it be signed
spt., spiritus ... ... a spirit
syr., syrupus... ... ... a syrup
st., sumat ... ... let the patient take
sum. (1) sumatur v. sumantur let it (or them) be taken
(2) sumendus ... to be taken

t.i.d., ter in die ... ... three times a day
tab., tabella ... ... a tablet
talis ... ... such as, like this
tr. v. tinct., tinctura ... ... a tincture
troch., troschisci ... ... lozenges

WEIGHTS AND MEASURES

The weights and measures in general use by prescribers in this country are the Apothecaries' Weights and Measures. As the Metric System is gaining repute, however, and has been inserted into the British and United States Pharmacopœias, an equivalent is given.

APOTHECARIES' WEIGHT.	METRIC WEIGHT
Gr.i. = 1 Grain	= 0·0648 Gramme.
℈ i. = 1 Scruple (20 Grains)	= 1·296 Grammes.
ʒi. = 1 Drachm (3 Scruples)	= 3·888 Grammes.
℥i. = 1 Ounce (8 Drachms)	= 31·1035 Grammes.

APOTHECARIES' MEASURE.	METRIC MEASURE
Min.i. = 1 Minim	= 0·059 Millilitres.
Fl. ℈ i. = 1 Fluid Scruple (20 Minims)	= 1·184 Millilitres.
Fl.ʒi. = 1 Fluid Drachm (60 Minims)	= 3·552 Millilitres.
Fl.℥i. = 1 Fluid Ounce (8 Drachms)	= 2·841 Centilitres.
O.i. = 1 Pint (20 Ounces)	= 0·568 Litre.

15·4 Grains = 1 Gramme.
15 Minims = 1 Cubic Centimetre (approx.)
32 Fluid Ounces = 1 Litre (approx.)

N.B.—The quantities of the ingredients of a prescription are expressed by the sign, followed by Roman numerals. Examples:—

One Grain is written — gr i.
Two Scruples is written — ℈ ii.
Five Drachms is written — ʒv.
Eight Ounces is written — ℥viii.
Ten Ounces is written — ℥x.
&c., &c.

DOSES

Doses are usually decreased for patients of advanced years, and for children.

The accepted rule for ascertaining the dose for a child under the age of twelve, is to divide the age of the child by the age + 12; and multiply the adult dose by the result.

EXAMPLE.

It is required to find the dose of a drug, the adult dose of which is 10 grains, for a child 3 years old.

$$\frac{\text{AGE}}{\text{AGE} + 12} = \frac{3}{3 + 12} = \frac{3}{15} = \frac{1}{5} \times \frac{10}{1} = 2$$

To find the proportionate dose for any age between 12 and 20, take one-twentieth of the maximum adult dose, and multiply the result by the age.

EXAMPLE.

It is required to find the dose of a drug, of which the maximum adult dose is 10 grains, for a youth 16 years of age.

$$\frac{1}{20} \times \frac{10}{1} = \frac{1}{2} \times \frac{16}{1} = 8 \text{ grains, for a youth 16 years of age.}$$

The exceptions to these rules are of little interest to the dental surgeon. Generally speaking, however, the dose of purgatives should be greater, and of narcotics less, than indicated by the rule.

TABLE OF DOSES

ABRIDGED TO MEET THE REQUIREMENTS OF THE DENTAL SURGEON.

Acid Arseniosum	gr. $\frac{1}{60}$—gr. $\frac{1}{15}$
Acid Carbolicum Liquefactum	min. 1—min. 3
Acid Gallicum	gr. 5—gr. 15
Acid Nitro-hydrochlor dil.	min. 5—min. 20
Acid Tannicum	gr. 2—gr. 5
Æther	min. 10—min. 60
Amyl Nitris (mouth)	min. $\frac{1}{2}$—min. 1
„ (inhaled)	min. 2—min. 5

Antifebrinum	gr. 1—gr. 3
Antipyrinum (Phenazonum)	gr. 5—gr. 15
Apomorphinæ Hydrochloridum	gr. $\frac{1}{32}$—gr. $\frac{1}{16}$
Aspirin	gr. 5—gr. 15
Atropina	gr. $\frac{1}{200}$—gr. $\frac{1}{100}$
Bismuthi Carbonas	gr. 5—gr. 20
Butyl-Chloral Hydras	gr. 5—gr. 20
Caffeinæ Citras	gr. 2—gr. 10
Calcii Chloridum..	gr. 5—gr. 15
Calcii Hypophosphis	gr. 3—gr. 10
Calcii Lactas	gr. 5—gr. 15
Calomelas (Hydrarg.Subchlor)	gr. $\frac{1}{4}$—gr. 5
Chloral Hydras...	gr. 5—gr. 20
Cocainæ Hydrochloridum	gr. $\frac{1}{20}$—gr. $\frac{1}{2}$
Cupri Sulphas (astringent)	gr. $\frac{1}{4}$—gr. 2
„ (emetic)	gr. 5—gr. 10
Ext. Cascaræ Sagradæ Liq.	dr. $\frac{1}{2}$—dr. 1
Ext. Ergotæ Liq.	min. 10—min. 30
Ferri Hypophosphis	gr. 1—gr. 5
Ferri et Quinæ Citras	gr. 5—gr. 10
Guaiacol	min. 1—min. 5
Guaiacol Carbonas	gr. 5—gr. 10
Hydrarg. Perchloridum	gr. $\frac{1}{32}$—gr. $\frac{1}{16}$
Liquor Arsenicalis (Fowler)	min. 2—min. 8
Liquor Ferri Perchlor.	min. 5—min. 15
Liquor Hydrarg. Perchlor.	dr. $\frac{1}{2}$—dr. 1
Liq. Morphinæ Hydrochlor.	min. 10—min. 60
Liq. Strychninæ Hydrochlor.	min. 2—min. 8
Lithii Citras	gr. 5—gr. 10
Lithii Salicylas	gr. 5—gr. 10
Magnesii Carbonas	gr. 5—gr. 60
Magnesii Sulphas	gr. 30—oz. $\frac{1}{2}$
Morphinæ Hydrochloridum	gr. $\frac{1}{8}$—gr. $\frac{1}{2}$
Oleum Ricini (castor oil)	dr. 1—dr. 8

Phenacetinum	gr. 5—gr. 10
Phosphorous	gr. $\frac{1}{100}$—gr. $\frac{1}{20}$
Pil. Hydrargyri (blue pill)	gr. 4—gr. 8
Pituitary Gland Extract	gr. 1—gr. 3
Potassii Bicarbonas	gr. 5—gr. 30
Potassii Bromidum	gr. 5—gr. 30
Potassii Chloras	gr. 5—gr. 15
Potassii Iodidum...	gr. 5—gr. 20
Quinine Salts	gr. 1—gr. 10
Salicinum...	gr. 5—gr. 20
Sodii Bicarbonas...	gr. 5—gr. 30
Sodii Salicylas	gr. 10—gr. 30
Sodii Sulphas	gr. 30—oz. $\frac{1}{2}$
Spt. Ætheris Nitrosi	min. 20—min. 90
Spt. Ammon. Aromat.	min. 20—min. 90
Strychnina (and its salts)	gr. $\frac{1}{60}$—gr. $\frac{1}{15}$
Sulphonal	gr. 10—gr. 30
Syr. Ferri Phosph. c Quininâ et Strychninâ (Easton)	dr. $\frac{1}{2}$—dr. 1
Syr. Ferri Phosph. Co.	dr. $\frac{1}{2}$—dr. 2
Thyroid Gland	gr. $\frac{1}{2}$—gr. 5
Tinct. Aconiti	min. 2—min. 5
Tinct. Digitalis	min. 5—min. 15
Tinct. Ferri Perchloridi	min. 5—min. 15
Tinct. Gelsemii	min. 5—min. 15
Tinct. Iodi	min. 2—min. 5
Tinct. Nucis Vomicæ	min. 5—min. 15
Tinct. Quininæ Ammon....	dr. $\frac{1}{2}$—dr. 1
Tinct. Strophanthi	min. 2—min. 5
Trional	gr. 10—gr. 20
Veronal	gr. 5—gr. 10
Vinum Ipecacuanhæ (emetic)	dr. 4—dr. 6
Zinci Sulphas (emetic)	gr. 10—gr. 30

HYPODERMIC DOSE TABLE

These doses are, generally speaking, smaller than by the mouth.

It is advisable to use "Tablets" of standard strength.

Apomorphinæ Hydrochlor.	gr. $\frac{1}{20}$—gr. $\frac{1}{10}$
Atropinæ Sulphas...	gr. $\frac{1}{200}$—gr. $\frac{1}{100}$
Cocainæ Hydrochloridum	gr. $\frac{1}{10}$—gr. $\frac{1}{2}$
Eucainæ Lactas	gr. $\frac{1}{10}$—gr. $\frac{1}{2}$
Morphinæ Hydrochloridum	gr. $\frac{1}{8}$—gr. $\frac{1}{4}$
Strychninæ Hydrochloridum	gr. $\frac{1}{150}$—gr. $\frac{1}{10}$

SOLUBILITIES

A Table of Chemicals in frequent use or prescribed by the Dental Surgeon.

The numbers in the various columns indicate the number of parts of the Menstrua in which one part of the Chemical is Soluble.

Name of Chemical	Water	Alcohol 90%	Ether	Glycerine
Acidum Arseniosum	100	sparingly	—	5
Acidum Boricum	30	30	—	10
Acidum Carbolicum	12	very sol.	very sol.	very sol.
Acidum Gallicum	100	5	—	—
Acidum Tannicum...	1	1	—	2
Alumen	10	insol.	—	3
Ammonii Bromidum	1·2	12·5	—	—
Argenti Nitras	0·54	24	—	readily
Caffeinæ Citras	32	22	—	—
Calcii Chloridum	1	3	—	—
Chloral Hydras	very sol.	very sol.	very sol.	very sol.
Cocainæ Hydrochloridum ...	0·5	4	—	—
Cupri Sulphas	3·5	almost insol.	—	4

Name of Chemical	Water	Alcohol 90%	Ether	Glycerine
Eucainæ Lactas	4	8	—	—
Hydrargyri Perchloridum ...	16	3	4	15
Iodoform	sparingly	80	6	—
Iodum	5000	10	3	—
Lithii Citras	2	almost insol.	—	—
Magnesii Sulphas	1	insol.	—	—
Menthol	insol.	readily	readily	—
Morphinæ Hydrochloridum ...	24	50	—	5
Oleum Anisi	almost insol.	4	—	—
Oleum Cajeputi	,,	in all proportions	—	—
Oleum Caryophylli	,,	in all proportions	—	—
Oleum Cinnamomi...	,,	0·3	—	—
Oleum Eucalypti...	,,	0·3	—	—
Oleum Menthæ Piperitæ ...	,,	0·5	—	—
Phenacetin	1400	16	—	—
Phenazonum (Antipyrin)	1	1·3	50	—
Potassii Bromidum	2	200	—	4
Potassii Chloras...	16	insol.	—	32
Potassii Iodidum	0·75	12	—	2·5
Potassii Permanganas	20	decomposes	—	explosive
Quininæ Hydrochloridum ...	35	3	—	—

Name of Chemical	Water	Alcohol 90%	Ether	Glycerine
Quininæ Sulphas...	800	86	—	—
Saccharin (Glusidum)	400	25	—	—
Sodii Biboras	25	insol.	—	—
Sodii Bicar onas	11	insol.	—	—
Sodii Bromidum	1·2	16	—	1
Sodii Chloridum	2·8	almost insol.	—	—
Sodii Salicylas	0·9	6	—	readily
Sodii Sulphas	2·8	insol.	—	1
Strychninæ Hydrochloridum ...	35	60	—	—
Sulphonal	450	50	—	—
Thymol	1100	0·5	—	—
Veronal	160	8·5	—	—
Zinci Sulphas	0·53	insol.	—	3

INCOMPATIBILITY

It is important in prescribing that care be taken not to order substances to be mixed together, which are pharmaceutically, therapeutically or chemically incompatible.

BRIEF SUMMARY OF INCOMPATIBLES

Name	Incompatible with
Acids	Alkalies, Acetates, Metallic Oxides.
Alum	Alkalies, Alkaline Carbonates, Borax.
Bi-carbonate of Soda ...	Acids, Metallic Salts, Alkaloidal Salts.
Borax	Silver Nitrate, Zinc Salts, Cocaine Hydrochloride.
Bromides	Iron Salts, Nitrate of Silver.
Calomel	Alkalies.
Chlorate of Potash ...	Mineral Acids, Organic Substances.
Chromic Acid	Alcohol, Ether, Glycerine, Organic Substances.
Essential Oils	All aqueous solutions.
Iodine	Ammonia, Metallic Salts.
Iron Salts	Alkaline Carbonates, Tannic Acid.
Nitrate of Silver ...	Chlorides, Bromides, Iodide of Potassium, Sulphate of Zinc.
Permanganate of Potash	Organic substances.
Sulphate of Magnesia ...	Carbonates, Chloride of Calcium.
Tannic Acid	Mineral Salts and Acids, Alkaline Carbonates and Bi-carbonates.

SCHEDULE OF POISONS

(Poisons and Pharmacy Act, 1908).

The Poisons and Pharmacy Act came into force April 1st, 1909, and the present schedule replaced that given in the Act of 1868.

The poisons to which regulations apply are placed in two groups, viz. :—

PART I

Not to be sold by retail unless the purchaser is known to, or introduced by some person known to, the seller, who must be a registered Chemist and Druggist or registered medical practitioner; also entry to be made in poison-book of (1) date of sale, (2) name and address of purchaser, (3) name and quantity of article, (4) purpose for which it is wanted—attested by signature of buyer, and must be labelled with (1) name of article, (2) the word "Poison," (3) name and address of seller.

PART II

Must be labelled with (1) name of article, (2) the word "Poison," (3) name and address of seller, who must be a registered Chemist and Druggist.

In the table of Poisons on pages 210-220, those in Part I. are marked (I.) and those in Part II. are marked (II.).

(NOTE—For Orders in Council, Special Provisions for Wholesale Trading, the Arsenic Act, and further details reference should be made to the Act).

DANGEROUS DRUGS ACT, 1920.

An Act to regulate the Importation, Exportation, Manufacture, Sale and Use of Opium and other Dangerous Drugs.

Part I. and II. apply to Raw and Prepared Opium.

Part III. applies to Morphine, Cocaine, Ecgonine, and Diamorphine (Heroin), and their respective salts, and medicinal opium, and any preparation, admixture, extract or other substance containing not less than one-fifth per cent. of morphine or one-tenth per cent. of cocaine, ecgonine or diamorphine.

Regulations dated May 20th, 1921, state that:—

No person shall supply or procure or offer to supply or procure any of the drugs to or for any person, whether in the United Kingdom or elsewhere, or shall advertise any of the drugs for sale—

(*a*) unless he is licensed by the Secretary of State or is authorised by these Regulations or by any authority granted by the Secretary of State to supply the drug, or unless he is licensed by the Secretary of State to import or export the drugs or unless he is licensed or otherwise authorised to manufacture the drug; or

(*b*) otherwise than in accordance with the terms and conditions of such licence or authority;

Except when the drugs are lawfully dispensed in pursuance of a prescription given by a duly qualified medical practitioner, registered dentist, or registered veterinary surgeon, or are supplied by a duly qualified medical practitioner or registered veterinary surgeon who dispenses his own medicines, in accordance with the conditions hereinafter specified, no person shall supply or procure or offer to supply or procure any of the drugs to or for any person in the United Kingdom who is not licensed or otherwise authorised to be in possession of the drug nor to any person so licensed or authorised except in accordance with the terms and conditions of such licence or authority;

Provided that administration of the drugs by or under the direct personal supervision of a duly qualified medical practitioner, or by or under the direct personal supervision of a registered dentist in dental treatment, or by or under the direct personal supervision of a registered veterinary surgeon in the treatment of any animal, shall not be deemed to be supplying the drug within the meaning of this and the following Regulations.

A prescription for the supply of the drugs must comply with the following conditions:—

The prescription must be in writing, must be dated and signed by the medical practitioner, registered dentist, or registered veterinary surgeon as the case may

be, with his full name and address, and must specify the name and address of the person for whose use the prescription is given, and the total amount of the drug to be supplied on the prescription.

A prescription shall only be given by a registered dentist for the purposes of dental treatment, and shall be marked " For local dental treatment only."

A medical practitioner, registered dentist or registered veterinary surgeon shall not give any prescription for the supply of any of the drugs otherwise than in accordance with the foregoing conditions.

The prescription shall not be given for the use of the prescriber himself (Aug. 1922).

A medical practitioner who dispenses any medicines to which these Regulations apply shall enter particulars thereof in his day book or in the register hereinafter specified.

The following conditions shall be observed by persons dispensing prescriptions for the drugs :—

(*a*) a prescription for any of the drugs shall only be dispensed if the person dispensing the prescription is acquainted with the signature of the medical practitioner, registered dentist, or registered veterinary surgeon by whom the prescription purports to be given, or is acquainted with the person for whose use the prescription is given, and has no reason to suppose that the prescription is not genuine;

(*b*) the drugs shall not be supplied more than once on the same prescription : provided that, if the prescription so directs, the drugs may be supplied on more than one but not exceeding three occasions, as directed in the prescription, at intervals to be specified in the prescription;

(*c*) the prescription shall be marked with the date on which it is dispensed, and shall be retained by the person, firm, or body corporate by whom the prescription is dispensed, shall be kept on the premises where it is dispensed, and shall be available for inspection.

No person shall be in possession of, or attempt to obtain possession of (Aug. 1922) any of the drugs unless:—

(*a*) he is licensed to import or export the drug, or

(*b*) he is licensed or otherwise authorised to manufacture or supply the drug, or

(*c*) he is otherwise licensed by the Secretary of State or authorised by these Regulations or by any authority granted by the Secretary of State to be in possession of the drug; or

(*d*) he proves that the drug was supplied for his use by a duly qualified medical practitioner or registered veterinary surgeon or on and in accordance with such a prescription as aforesaid.

Any duly qualified medical practitioner, or any registered dentist, or any registered veterinary surgeon or any person employed or engaged in dispensing medicines at any public hospital or other public institution being a person duly registered under the Pharmacy Act, 1868, as amended by the Poisons and Pharmacy Act, 1908, or any person in charge of a laboratory for purposes of research or instruction to any University, University College, public Hospital or other institution approved by the Secretary of State for the purpose, or any person appointed by a local authority with the approval of the Minister of Health as an analyst for the purposes of the Sale of Food and Drugs Act, 1875 to 1907, is hereby authorised so far as is necessary for the practice of his profession or employment in such capacity to be in possession of and supply the drugs.

In the event of any person authorised by these Regulations or by any authority granted by the Secretary of State to manufacture, supply or be in possession of the drugs, or any of them, being convicted of any offence against the Act or of an offence under the enactments relating to the Customs as applied by the Act, the Secretary of State may by notice in the London, Edinburgh or Dublin Gazette withdraw the authorisation in respect of such person, if, in the opinion of the Secretary of

State, such person cannot properly be allowed to manufacture, supply or be in possession of any such drug.

No person shall deliver any of the drugs to any person not licensed or otherwise authorised to be in possession of the drugs who purports to be sent by or on behalf of a person so licensed or authorised unless such person produces an authority in writing, signed by the person so licensed or authorised, to receive the drug on his behalf and unless the person supplying the drug is satisfied that the authority is genuine. This Regulation shall not be deemed to apply to medicines dispensed in pursuance of the foregoing Regulations.

Any of the drugs in the order or disposition of any person shall be deemed to be in his possession.

The Secretary of State may exempt from the operation of these regulations any hospital or other public institution subject to the observance of such conditions as he may by order prescribe.

These regulations shall not apply in respect of the preparations named in Schedule II. to these Regulations, nor to any of the drugs when de-natured in a manner approved by the Secretary of State. The Secretary of State may from time to time by order add any other preparation to the Schedule or remove any preparation from the Schedule.

Schedule I. (*a*) and (*b*) apply to records of Morphine, &c.

Diamorphine (Heroin), &c., and Medicinal Opium, purchased or otherwise obtained, sold or supplied.

Schedule II. applies to a number of preparations, including Opium Plaster and Liniment, Arsenical Paste (B.P.C.).

(NOTE.—Only such regulations are given as are directly applicable to dentists; for full details see Act and Regulations).

POISONS AND ANTIDOTES

A Poison (potio=a draught) is a substance, which, on its introduction into the body, by the mouth, or through

the skin, either by a wound or an abrasion, absorption or injection, causes injury of the organs, deranges vital processes, and causes death.

Substances are relatively poisonous, the action depending on the quantity taken into the body, and the idiosyncrasy of the individual. Most drugs in excessive quantities are poisonous.

Certain drugs, harmless in ordinary doses, have a marked tendency to accumulate in the system after prolonged or frequent administration, and thus produce poisonous symptoms.

Cumulative action is due to—

(1) Rapid absorption and slow elimination.

(2) Sudden arrest of the excretion of the drug.

An Antidote (anti=against, do=I give) is a remedy which counteracts the injurious action of a poison.

Antidotes may be divided into three classes:—

(1) Mechanical, or those which intervene between the poison and the surface in contact with it.

(2) Chemical, or those which by interaction with the poison produce a non-injurious compound.

(3) Physiological, or those which combat and nullify the physiological action of the poison.

In the following table the mechanical antidotes include emptying the stomach and demulcents.

The various methods by means of which a stomach may be emptied of its poisonous contents are:—

(1) Lavage, by means of a soft stomach tube, and warm water in which the chemical antidote has been dissolved or suspended.

(2) By means of a stomach pump or stomach tube used as a siphon.

(3) By the administration of emetics.

N.B.—These methods must not be adopted in cases of poisoning by corrosives as the condition of the œsophagus and stomach would induce perforation.

EMETICS MOST USEFUL IN CASES OF POISONING

Apormorphine Hydrochloride	$\frac{1}{10}$ grain. Hypodermic Injection.
Powdered Ipecacuanha ...	30 grains in water.
Liquid Extract of Ipecacuanha	20 minims in water.
Ipecacuanha Wine	6 drachms
Mustard	1 tablespoonful in water.
Common Salt	2 tablespoonfuls in water.
Zinc Sulphate	30 grains in water.
Copper Sulphate	10 grains in water.

STIMULANTS MOST USEFUL IN CASES OF POISONING

1. Brandy	A tablespoonful in water.
2. Strychnine Hydrochloride	$\frac{1}{60}$ grain. Hypodermic Injection.
3. Ether	36—60 minims. Hypodermic Injection.
4. Sal Volatile ...	One teaspoonful in water.
5. Hot Coffee ...	Four tablespoonfuls boiled with half-a-pint of water.

TABLE OF POISONS, SYMPTOMS AND ANTIDOTES

D.D.A.—Dangerous Drugs Act. * Do not use Stomach Tube or Emetic
c. Chemical Antidote. *p.* Physiological Antidote.
† Apomorphine Hydrochlor is the best Emetic in this case,
The figures following Stimulants refer to the above table.

* ACIDS, MINERAL

Hydrochloric, Nitric, Sulphuric

Symptoms . .	Pain in mouth, throat and abdomen, partial destruction of mucous membrane.

Vomiting of altered blood.
Extreme collapse.

Antidotes . . . **Physiological and Chemical.**
Carbonate of Magnesia, Calcium, Sodium or Potassium, one tablespoonful, in or with a tumbler of water. (*c*).
Whitening, Chalk or Wall Plaster as above. (*c*).
Bicarbonate of Sodium or Potassium, failing the above. (*c*).

Mechanical.
Milk.
White of egg.
Thick gruel.

ACID CARBOLIC (II)

Creosote and Disinfecting Fluid

Symptoms . . As Mineral Acids.
Lips and mouth white and hard.
May cause instant death from arrest of respiration.

Antidotes . . . **Physiological and Chemical.**
Sodium or Magnesium Sulphate (Epsom Salts), one tablespoonful in a tumbler of warm water. (*c*).

Mechanical.
Lavage, with care, with the chemical antidote until the fluid from the stomach no longer smells of Carbolic Acid. Milk freely. Olive Oil, half a tumblerful.

Other Treatment Stimulants freely.
Artificial respiration.
Saline infusion.

ACID, HYDROCYANIC (I)

Cyanides

Symptoms . . Giddiness, insensibility, loss of motor power.

Convulsions.
Laboured respiration.
Profound collapse.
The symptoms arise immediately the poison is swallowed, and all treatment must be promptly carried out to be of any avail.

Antidotes . . . **Physiological and Chemical.**
Dissolve 15 grains of Sulphate of Iron in half a tumbler of water, add to it about 30 drops of Tincture or Solution of Perchloride of Iron. To this add from one to two teaspoonfuls of Carbonate of Magnesia, previously mixed with a little water and give immediately. (*c*).

Mechanical.
Stomach to be emptied if in time.

Other Treatment Fresh air.
Cold douche.
Artificial respiration.
Stimulants 1, 3, 4.

ACONITE (I)

Tincture, Liniment, Aconitine

Symptoms . . Tingling of lips, mouth, skin.
Nausea, vomiting.
Impairment of sight, hearing, speech.
Dyspnœa.
Skin cold and clammy.
Giddiness.
Mind remains clear.

Antidotes . . . **Physiological and Chemical.**
Tincture of Digitalis, by mouth, min. 20, or hypodermically, gr. 1/100 of Digitalin. (*p*).

Mechanical.
Stomach tube or emetic.

Other Treatment Recumbent position.
Artificial respiration.
Warmth to extremities.
Stimulants, 1, 2.
Saline infusion.

ALCOHOL

(Acute)

Symptoms . . Face flushed, lips livid, cerebral incoordination, coma, with stertorous breathing in stage of reaction.
Headache, nausea, vomiting.

Mechanical.
Stomach tube or emetic, if necessary.

Other Treatment Cold affusion.
Hot Coffee.
Artificial respiration.
Warmth to extremities.

* ALKALIES CAUSTIC

Ammonia, Soda, Potash

Symptoms . . Pain in throat, œsophagus and abdomen.
Vomiting of altered blood.
Purging.
Body cold, with cold sweat.
Prostration.
Pulse, rapid and weak.

Antidotes . . . **Physiological and Chemical.**
Tartaric or Citric Acid, 20 grs. in half a tumbler of water.
Vinegar or Lemon Juice, 2 tablespoonfuls diluted with water. (*c*).

Mechanical.
Milk freely.
Olive Oil, half a tumblerful.
White of Egg.

Other Treatment Stimulants freely.

ANTIFEBRIN, ANTIPYRIN, PHENACETIN

Symptoms . . Vomiting.
Face flushed.
Profuse sweating.
Collapse.

Other Treatment Stimulants 1, 4, 2.
Warmth to extremities.
Artificial respiration.

ARSENIC (I)

and its Preparations

Symptoms . . Incessant vomiting and purging.
Severe abdominal pain.
Collapse.

Antidotes . . . **Physiological and Chemical.**
Hydrated Ferric Oxide, prepared freshly by mixing together one tablespoonful of Solution of Perchloride of Iron in a wineglassful of water and two teaspoonfuls of Solution of Ammonia.

Mechanical.
Stomach tube or emetic.
Milk freely, Olive Oil, half a tumbler.
White of egg.
Thick gruel.

Other Treatment Stimulants 1, 2, 4, for prostration.
Warmth to extremities.

ATROPINE (I)

Belladonna and its Preparations

Symptoms . . Skin flushed.
Temperature raised.
Rapid wiry pulse.
Pupils widely dilated, vision and accommodation impaired.
Respiration feeble.
Urine suppressed.
Delirium.

Antidotes . . . **Physiological and Chemical.**
Tannic Acid, 20 grs. in water or strong overdrawn tea. (*c*).
Nitrate of Pilocarpine, $\frac{1}{4}$ gr. injected hypodermically. (*p*).

Mechanical.
Stomach tube or emetic.

Other Treatment Artificial respiration.
Stimulants 1, 5.
Warmth to extremities.

CHLORAL HYDRATE (II)

Symptoms . . Skin pale or livid and covered with sweat.
Pulse feeble.
Respiration at first laboured, then shallow and feeble.
Coma.

Mechanical.
Stomach tube or emetic.

Other Treatment Warmth.
Stimulants, 2, 1.
Artificial respiration.

CHLOROFORM (II)

Symptoms . . Heart failure. In anæsthesia.
Failure of respiration. In anæsthesia.

Antidotes . . . **Physiological and Chemical.**
Amyl Nitrite Capsules, 3 mins. for inhalation. (*p*).

Other Treatment Pull tongue forward.
Recumbent attitude.
Fresh air.
Artificial respiration.
Stimulants, 1, 2, 3.
Heart massage.

COCAINE (I. *D.D.A.*)

Salts and Analogues

Symptoms . . Skin pale.
Giddiness and fainting.
Pulse rapid.
Respiration rapid.
Convulsions.

Antidotes . . . **Physiological and Chemical.**
Amyl Nitrite Capsules, 3 mins for inhalation. (*p*).
Pilocarpine Nitrate, gr. $\frac{1}{4}$, by subcutaneous injection. (*p*).

Mechanical.
Stomach tube.

Other Treatment Stimulants, 1, 2, 4.
Artificial respiration.

COPPER SULPHATE

(Acute)

Symptoms . . Salivation.
Burning abdominal pain.
Vomiting bluish liquid.
Giddiness.
Epileptiform convulsions.
Jaundice.
Coma.

Antidotes . . . **Physiological and Chemical.**
Bicarbonate of Soda or Potash, two teaspoonfuls in water. (*c*).
Ferrocyanide of Potash, 10 grains in four tablespoonfuls of water, repeated. (*c*).

Mechanical.
Large quantities of milk, previous to emptying stomach by the stomach tube or an emetic if vomiting has not been caused by the poison.

ETHER

Symptoms . . Muscular relaxation.
Pulse increased in force and frequency, in large overdoses feeble.
Respiration stertorous, in large doses, shallow.
Coma.

Other Treatment Head low, if pale.
Warmth.
Friction, flagellation.
Artificial respiration.
Stimulants, 1, 2, 3.

IODINE AND IODIDES

(Acute)

Symptoms . . Pain in throat.
Severe abdominal pain.
Vomiting and purging.
Metallic taste in mouth.
Intense thirst.
Giddiness.
Convulsions.

Antidotes . . . **Physiological and Chemical.**
Bicarbonate of Soda, two teaspoonfuls in half a tumbler of water. (*c*).
Starch, with cold water. (*c*).

Mechanical.
Stomach tube or emetic.
Milk, copiously.
Gruel.
White of egg.

(Chronic)

Symptoms . . Frontal Headache.
Eyes and nose water.
Salivation.
Atrophy of the glands (mammæ and testes).

Antidotes . . . **Physiological and Chemical.**
Bicarbonate of Soda, in large doses (*c*)

Other Treatment Cease administration or give large doses of the poison, thus inhibiting the function of the glands.

LEAD AND ITS SALTS

(*Acute*)

Symptoms . . Metallic taste in mouth.
Abdominal pain.
Diarrhœa or obstinate constipation.
Vomiting may occur.
Intense thirst.
Convulsions.
Coma.

Antidotes . . . **Physiological and Chemical.**
Sulphate of Magnesium (Epsom Salts) or Sodium, a tablespoonful in a tumbler of water. (*c*).

Mechanical.
Stomach tube or emetic.
Milk, freely
White of egg, freely.

MERCURY, SALTS OF (I & II)

(Acute)

Symptoms . . Metallic taste in mouth.
Pain in stomach.
Nausea, vomiting and purging.
Skin cold and clammy.
Collapse.

Mechanical.
Large quantities of milk and white of egg, previous to stomach tube or emetic.

Other Treatment Tincture of opium, 20 mins. in water to relieve pain and purging.
Stimulants, 1, 4, if depressed.

MORPHIA (I. *D.D.A.*)
and its Salts

Symptoms . . Headache—Face cyanosed.
Drowsiness, leading to coma.
Stertorous respirations.
Pulse feeble.
Pin-hole pupils.

Antidotes . . . **Physiological and Chemical.**
Permanganate of Potash, 5 grains in a tumblerful of water. (*c*).

Mechanical.
Stomach tube or emetic. Lavage with a weak solution of Pot. Permang.

Other Treatment Forced movements.
Cold water dashed on face.
Stimulants freely.
Artificial respiration.

OPIUM (I. *D.D.A.*)
and its Preparations

PHOSPHORUS

Symptoms . . Stage I.
Garlic taste.
Abdominal pain.
Intense thirst.
Vomiting, vomit has garlic odour.

Stage II.
Intermission of symptoms for two or three days or more.

Stage III.
Jaundiced.
Enlarged liver.
Cold sweats.
Feeble pulse.
Coma.

Antidotes . . . **Physiological and Chemical.**
Copper Sulphate, 3 grains in half a tumbler of water every five minutes

until vomiting is induced, then every fifteen to thirty minutes. —(*c*).
French Turpentine or Sanitas, half a teaspoonful in two tablespoonfuls, repeated every quarter of an hour for four doses, then three times a day. (*c*)

Mechanical.
Stomach tube or emetic.
Milk, freely.
White of egg.

CAUTION—Avoid oils.

SILVER NITRATE

Symptoms . . Pain in abdomen.
Vomiting of white and curdy matter, which blackens on exposure to light.
Prostration.

Antidotes . . . **Physiological and Chemical.**
Common Salt, two tablespoonfuls in a tumblerful of water. (*c*).

Mechanical.
Emetic after administration of chemical antidote to remove insoluble chloride.
White of egg freely.

STRYCHNINE, NUX VOMICA (I. *D.D.A.*)

Symptoms . . Intermittent, painful tetanic convulsions, causing opisthotonos, risus sardonicus. Spasm of respiration, producing asphyxia.

Antidotes . . . **Physiological and Chemical.**
Tannic Acid, 20 grains in water or strong overdrawn tea. (*c*).
Bromide of Potassium 30-60 grains in water. (*p*).
Chloral Hydrate 40 grains in water by mouth or rectum. (*p*).

Mechanical.
Stomach tube or emetic† following administration of chemical antidote.

Other Treatment Chloroform to control convulsions to permit of other treatment.
Artificial respiration.

SULPHONAL, TRIONAL, VERONAL (II)

Symptoms . . Abdominal pain.
Vomiting.
Constipation.
Confusion of mind.
Partial paralysis.
Collapse.

Antidotes . . . **Mechanical.**
Stomach tube or emetic.

Other Treatment Warmth to extremities.
Stimulants 2, 1, 4, 5.
Artificial respiration.

✶ ZINC SALTS

Symptoms . . Abdominal pain.
Lips and mouth corroded.
Nausea. Vomiting.
Convulsions.
Coma.

Antidotes . . . **Physiological and Chemical.**
Carbonate or Bicarbonate of Sodium or Potassium, two to four teaspoonfuls in water. (*c*).

Mechanical.
White of egg and milk freely.

FORMULÆ

ANÆSTHETICS

General

A.C.E. Mixture

Alcohol 90%	1 part
Chloroform	2 parts
Ether	3 parts

Mix.

Local

(1)

Cocaine Hydrochloride	3 grains
Adrenalin Solution (1 in 1000)	24 minims
Benzoic Acid	1 grain
Normal Saline Solution, to make	1 ounce

Mix.

(2)

Benzamine Hydrochloride	$\frac{1}{5}$ grain
Adrenalin	3 minims
Solution of Hamamelis	20 minims

Mix.

(3)

Novocaine	2 grains
Normal Saline Solution	100 minims

Mix.

Add 1 drop of Adrenalin to 20 minims immediately before use.

Ringer's Solution

Sodium Chloride	0·88 parts
Potassium Chloride	0·025 ,,
Calcium Chloride	0·02 ,,
Sodium Bicarbonate	0·015 ,,
Distilled Water to	100 ,,

Dissolve.

CACHETS OR POWDERS

Analgesic and Antipyretic

(1)

Antipyrin	5 grains
Sulphate of Quinine	$\frac{1}{2}$ grain

Mix and make one dose.

(2)

Aspirin	5 grains
Phenacetin	4 grains
Citrate of Caffeine	1 grain

Mix and make one dose.

(3)

Citrate of Caffeine	1 grain
Phenacetin	4 grains

Mix and make one dose.

CHLORO-PERCHA

Gutta Percha (base plate) ... ... 2 drachms
Chloroform—q.s. to dissolve and make a paste.

DEVITALISING PASTE

Arsenic	40 grains
Sulphate of Morphia	20 grains

Creosote, a sufficient quantity to make a stiff paste.

DENTAL WAX

Beeswax	6 ounces
Hard Paraffin	1 ounce

Melt together, add ½ ounce Alkanet Root, and keep warm for two hours, strain and add Tincture of Tolu, Otto of Rose 5 drops. Pour into sheets.

DRAUGHTS

Aperient

Mistura Alba

Carbonate of Magnesia	10 grains
Sulphate of Magnesia	1 drachm
Peppermint Water to	1 ounce

Mix and make one draught.

Hypnotic

Chloral Hydrate	10 grains
Bromide of Potassium	10 grains
Syrup of Orange	1 drachm
Distilled Water	1½ ounces

Mix and make one draught.

DRESSINGS

Anodyne

(1)

Camphor	1 ounce
Chloroform	2 ounces
Creosote	2 drachms
Eugenol	1 drachm

Mix.

(2)

Chloretone	30 grains
Salicylate of Methyl	10 minims
Eugenol	30 minims

Mix.

(3)

Carbolic Acid	2 parts
Camphor	3 parts

Mix.

Bismuth Paste (Beck)

Subnitrate of Bismuth	30 parts
White Wax	5 parts
Hard Paraffin	5 parts
Soft Paraffin	60 parts

Mixed by the aid of heat.

Carbolic Resin

Carbolic Acid	3 drachms
Powdered Resin	4 drachms
Chloroform	2 drachms

Mix.

Germicidal and Antiseptic

Solution of Formaldehyde, 40%	1 drachm
Trikresol	1 drachm
Thymol	10 grains
Alcohol, 90%	1½ drachms
Glycerine	½ drachm

Mix.

Mummifying Paste

Dried Alum	1 drachm
Thymol	1 drachm
Glycerine	1 drachm

Oxide of Zinc, q.s., to make a paste.

Mix.

Pulp Capping

Oxide of Zinc ... ... 10 grains
Eugenol, q.s., to make a paste.
Mix.

N.B.—This may also be used as a root filling.

For Carbo-Eugenol add 10 per cent. Carbolic Acid.

LINIMENTS AND PAINTS

Anodyne

(1)

Camphor ... ... 1 part
Chloral Hydrate ... ... 1 part
Mix and make a paint.

(2)

Camphor ... ... 2 parts
Chloroform ... ... 1 part
Mix and make a liniment.

(3)

Anodyne and Counter-Irritant

Menthol ... ... 20 grains
Tincture of Iodine, strong ... ... 1 drachm
Tincture of Iodine ... ... 1 drachm
Tincture of Aconite (Flemming) ... ... 2 drachms
Mix and make a paint.

Antiseptic and Stimulating Paint

Carbolic Acid ... ... 20 minims
Lactic Acid ... ... 20 minims
Glycerine ... ... 2 drachms
Acetone ... ... 2 drachms
Alcohol, 90% ... ... 4 drachms
Mix and make a paint.

Ipecacuanha and Arsenic Paint

Fowler's Solution ... ... 1 part
Miscible liquid extract of ipecacuanha ... 1 part
Mix and make a paint.

Rubefacients

(1)

Liniment of Camphor	1 ounce
Liniment of Chloroform	½ ounce
Liniment of Soap	to 3 ounces

Mix and make a liniment.

(2)

Menthol	1 drachm
Liniment of Camphor	to 3 ounces

Mix and make a liniment.

(3)

Liniment of Aconite	1 part
Liniment of Belladonna	1 part
Liniment of Chloroform	1 part

Mix and make a liniment.

Zinc Chloride Varnish

Powdered Gum Mastic	1 drachm
Chloroform	½ ounce
Chloride of Zinc	5 grains

Mix and make a paint.

Temporary Filling or Seal for Dressings

Sulphate of Zinc—Saturated solution.
Oxide of Zinc—to make a thick cream.
Mix.

MIXTURES FOR INTERNAL ADMINISTRATION

(1)

Acid Quinine Mixture (Tonic)

Sulphate of Quinine	30 grains
Dilute Phosphoric Acid	1 drachm
Solution of Strychnine	12 minims
Syrup of Orange	½ ounce
Distilled Water	to 6 ounces

Mix.

Dose :—One tablespoonful to be taken three times a day before meals.

(2)

ALKALINE GENTIAN MIXTURE

Bicarbonate of Soda ... ... 2 drachms
Infusion of Gentian ... ... to 6 ounces
Mix.

Dose :—One tablespoonful to be taken three times a day after meals.

(3)

BISMUTH AND SODA MIXTURE

Bicarbonate of Soda ... ... 2 drachms
Sub-Carbonate of Bismuth ... ... 2 drachms
Peppermint Water ... ... to 6 ounces
Mix.

Dose :—One tablespoonful to be taken three times a day before meals.

(4)

IRON AND CHLORATE OF POTASH MIXTURE

Tincture of Perchloride of Iron ... ... 1 drachm
Chlorate of Potash ... ... 1½ drachms
Glycerine ... ... 4 drachms
Sulphate of Magnesia ... ... 4 drachms
Syrup of Orange ... ... 4 drachms
Distilled Water ... ... to 6 ounces
Mix.

Dose :—One tablespoonful three times a day after food.

(5)

IRON AND QUININE MIXTURE (TONIC)

Citrate of Iron and Quinine ... ... 1½ drachms
Tincture of Orange ... ... 2 drachms
Glycerine ... ... 4 drachms
Chloroform Water ... ... to 6 ounces
Mix.

Dose :—One tablespoonful to be taken three times a day before meals.

N.B.—In cases of persistent neuralgia, add 1 drachm of Tincture of Gelsemium to the six-ounce mixture.

(6)

SEDATIVE MIXTURE

Bromide of Potassium	40 grains
Bromide of Sodium	40 grains
Bromide of Ammonium	40 grains
Tincture of Cannabis Indica	1 drachm
Mucilage of Acacia	1 ounce
Syrup of Orange	½ ounce
Chloroform Water	to 6 ounces

Mix.

Dose:—One tablespoonful to be taken every four hours if required.

(7)

TONIC SYRUP MIXTURE

Compound Syrup of Phosphates	4 drachms
Easton's Syrup	4 drachms
Compound Syrup of Hypophosphites ...	4 drachms
Distilled Water	to 6 ounces

Mix.

Dose:—A tablespoonful in a wineglass of water to be taken immediately after meals.

(8)

WHITE MIXTURE (MISTURA ALBA)

Heavy Carbonate of Magnesia	1 drachm
Sulphate of Magnesia	6 drachms
Peppermint Water	to 6 ounces

Mix.

Dose:—A sixth part to be taken three times a day between meals.

MOUTH WASHES

Alkaline

Bicarbonate of Soda	2 drachms
Chloride of Soda	2 drachms
Biborate of Soda	2 drachms
Peppermint Water	to 10 ounces

Mix and make a mouth wash. One tablespoonful in half a tumbler of warm water to be used as directed.

NOTE—*The antiseptic value of mouth washes, tooth powders, and pastes, is determined by their antiseptic action in saliva, which in practically every case is materially less powerful than in water.*

Alkaline Antiseptic

(Glycerin Thymol Co. B.P.C.)

Bicarbonate of Soda	100 grains
Biborate of Soda	200 grains
Benzoate of Soda	80 grains
Salicylate of Soda	40 grains
Menthol	2 grains
Oil of Pine	4 minims
Oil of Wintergreen	2 minims
Thymol	4 grains
Eucalyptol	12 minims
Alcohol 90%	4 drachms
Glycerine	2 ounces
Solution of Carmine	40 minims
Distilled Water	40 ounces

Mix and make a mouth wash. One teaspoonful in half a tumbler of water as directed.

Antiseptic

Solution of Potash	6 drachms
Liquid Carbolic Acid	4 drachms
Peppermint Water	to 6 ounces

Mix and make a mouth wash. One teaspoonful in half a tumbler of warm water, to be used frequently, or as directed.

Antiseptic and Astringent

Iodide of Potassium	20 grains
Tannic Acid	2 drachms
Tincture of Iodine	2 drachms
Tincture of Myrrh	2 drachms
Rose Water	to 10 ounces

Mix and make a mouth wash. One tablespoonful in half a tumbler of warm water, to be used as directed.

Astringent

(1)

Solution of Hamamelis	1 ounce
Biborate of Soda	2 drachms
Tincture of Rhatany	2 drachms
Distilled Water	to 6 ounces

Mix and make a mouth wash. Shake the bottle. One tablespoonful to be added to half a tumbler of warm water, and used as directed.

(2)

Tincture of Myrrh	1 ounce
Tincture of Rhatany	1 drachm
Compound Tincture of Lavender	1 drachm
Glycerine of Borax	2 drachms
Eau de Cologne	to 4 ounces

Mix and make a mouth wash. Ten to fifteen drops in half a tumbler of warm water, to be used as directed.

Astringent and Stimulating

Chlorate of Potash	4 drachms
Tincture of Myrrh	4 drachms
Saturated Solution of Boric Acid	4 ounces
Peppermint Water	to 8 ounces

Mix and make a mouth wash. Shake the bottle. One tablespoonful in half a tumbler of warm water, to be used as directed.

Elixir Dentrifice

Benzoic Acid	48 grains
Chloroform	12 minims
Oil of Aniseed	5 minims
Oil of Peppermint	10 minims
Tincture of Cinnamon	1½ drachms
Solution of Carmine	q.s.
Alcohol 90%	to 4 ounces

Mix and make an elixir. Ten to twenty drops in half a tumbler of water.

TOOTH PASTES AND POWDERS

(1)

Powdered Hard Soap	1 drachm
Thymol	5 grains

Heavy Carbonate of Magnesia	2 drachms
Benzoate of Soda	20 grains
Eucalyptol	5 minims
Salicylate of Methyl	10 minims
Prepared Chalk	2½ ounces
Glycerine	q.s. of each equal parts
Rose Water	

Mix and make a tooth paste.

(2)

Powdered Hard Soap	1 drachm
Heavy Carbonate of Magnesia	2 drachms
Saccharin	3 grains
Carmine	2 grains
Salicylate of Methyl	10 minims
Precipitated Chalk	2½ ounces

Mix and make a tooth powder.

(3)

Powdered Orris Root	½ ounce
Chlorate of Potash	30 grains
Menthol	10 grains
Oil of Rose Geranium	10 minims
Prepared Chalk	1 ounce
Precipitated Chalk	2 ounces

Mix and make a powder.

Dental Plate Powder

Powdered Borax	35 parts
Perborate of Soda	5 parts
Powdered Soap	10 parts

Mix.

PART IV

HISTOLOGICAL TABLES

TO WHICH ARE ADDED SPECIAL FORMULÆ AND METHODS.

HISTOLOGICAL TABLES

TABLE A

* FIXATION

* Fixation is now generally understood to include "hardening" to the extent mentioned in the definition.

Definition . . . The process employed for :

(1) The rapid killing and hardening the elements of a tissue so that it retains the same form as it possessed during life, and subsequent treatment by chemical and mechanical agents does not bring about any change of form.

(2) Rendering insoluble elements which would otherwise be washed away by the various liquids employed during after treatment.

(3) Producing optical differentiation by coagulation of certain of the tissue elements.

Reagent . . . **Acetic Acid, Glacial.**

Aqueous solution from ·2 to 5%.
Used chiefly in conjunction with other fixatives aiding penetration, counteracting shrinkage and aiding optical differentiation.

,, . . . **Alcohol.**

In all strengths from 30% to absolute.
Of doubtful value alone as a fixative, useful in mixtures.

,, . . . **Bichromate of Potash.**

Aqueous solution from 2 to 5%.
Should be used with the addition of 5% Glacial Acetic Acid.
Used frequently in combination with Sulphate of Soda (Müller's Fluid, *q.v.*), Perchloride of Mercury, etc.

Reagent . . . **Chromic Acid.**
Aqueous solution from ·1 to 1%.
Rarely used alone on account of its poor penetration; 5% Glacial Acetic Acid should be added. Used in mixtures. (Flemming's Solution, *q.v.*).

,, . . . **Copper Acetate.**
Aqueous saturated solution.
Little used for the dental tissues.

,, . . . **Formaldehyde.**
Aqueous solutions from 2 to 10%.
Used alone and in conjunction with Picric Acid, Müller's Fluid, etc.
(*Vide* Freeborn's Solution).

,, . . . **Mercuric Chloride.**
Aqueous saturated solution.
Care must be taken to remove all traces of Mercury, by the addition of Iodine when "washing-out," otherwise sections will be brittle and present serious artefacts.

,, . . . **Nitric Acid**
Aqueous solution from 3 to 10%.
Rarely used as a fixative.

,, . . . **Osmic Acid.**
(*a*) Vapour from the solid.
(*b*) Aqueous solution ·1 to 1%.
Must be used in the dark. Has poor penetration, and therefore is frequently used in combination with other fixatives.

,, . . . **Picric Acid.**
Aqueous saturated solution.
Used in cases where great penetration is required, also used in combination with Osmic and Chromic Acids.

WASHING OUT

Definition . . . The process employed for the removal from a tissue of all traces of reagents used in "fixation."

Reagent . . . **Alcohol.**
From 70 to 90% in large volumes or frequent changes.
To remove :—
Acetic Acid.
Picric Acid.
Nitric Acid.

,, . . . **Water.**
Running water of frequent changes.
To remove :—
Osmic Acid.
Chromic Acid.
Bi-chromate of Potash.

,, . . . **Water or Alcohol.**
As above.
To remove Formaldehyde and Mercuric Chloride. Alcohol is to be preferred for the removal of Mercuric Chloride. In order to thoroughly remove all traces of Mercury, add Tincture of Iodine to the alcohol or water, until it has a port-wine colour. This must be repeatedly changed until the tissues no longer affect the colour.

HARDENING

Definition . . . The process employed for rendering soft tissue hard so as to allow of their being cut into sections without imbedding.

Reagents . . . *Vide* Fixation.
Most fixatives may be used for hardening. There are, however, a few exceptions. (*Ex.* Mercuric Chloride).
Large quantities of liquids are taken and the tissues suspended in it, commencing with weak solutions and gradually strengthening them.
Owing to improved imbedding methods,

hardening is rarely resorted to as a separate general method, but more as a special process—where large sections are required and imbedding would be impracticable, *e.g.*, Sections of brain.

DEHYDRATION

Definition . . . The process by means of which all superfluous aqueous reagents and the water of the tissue itself is removed.

Reagent . . . **Alcohol.**
In various strengths from 30% to Absolute.
No efficient alternative reagent has been found, though Acetone and Anilin Oil have been used in special processes.

PRESERVATION

Definition . . . The method employed for keeping specimens after fixing and hardening—for an indefinite period, before subjecting it to subsequent treatment in such a way that it shall not undergo any change of form.

Reagent . . . **Alcohol.**
In various strengths from 30% to 70%.

,, . . . **Formaldehyde.**
In aqueous solutions of various strengths from 2% to 5%.
Specimens which are to be cut into sections should not be allowed to remain longer than is necessary in the preservation medium as this is liable to produce brittleness.

DECALCIFICATION

Definition . . . The process employed for removing inorganic calcific salts from a hard tissue so that it may be rendered sufficiently soft to permit of being cut into sections.

Reagent . . . **Chromic Acid.**
Aqueous solution, 1%.
Rarely used alone as a decalcifying agent, but in combination with Hydrochloric or Nitric Acid to counteract the distortion of tissues said to be caused by these acids.

,, . . . **Formic Acid.**
Aqueous solution, 33%.
Recommended for the rapid decalcification of teeth as it does not cause the distortion attributed to the mineral acids.

,, . . . **Hydrochloric Acid.**
Aqueous solution, 10%.
Decalcifies rapidly, but is said to cause swelling of tissues.

,, . . . **Lactic Acid.**
Aqueous solutions of various strengths.
Has been recommended for the decalcification of teeth, but the advantages claimed for it are of doubtful value.

,, . . . **Nitric Acid.**
Aqueous solution from 1 to 3%.
Vide Hydrochloric Acid.

,, . . . **Nitro-Hydrochloric Acid**
Aqueous solution of various strengths.
10% Hydrochloric Acid, to which may be added 10% Nitric Acid and further addition of a similar quantity of Nitric Acid, to hasten the completion of the process. *cf.* Hopewell-Smith's method.
Recommended for the rapid decalcification of teeth and bone.
Objection has been made to the use of this reagent, as it is said to produce shrinkage and distortion of soft tissues. It is found, however, that, if due precautions are taken against rapid variations of temperature on the addition of

the Nitric Acid, the soft tissues (*e.g.*, the dental pulp) do not undergo any apparent change of form.

Reagent . . . **Trichloracetic Acid.**
Aqueous solution from 4 to 5%.
Vide Lactic Acid.

NEUTRALIZATION

Definition . . . The process by means of which all superfluous acid used during decalcification is removed from a tissue by means of alkalies.

Reagent . . . **Bicarbonate of Soda.**
Aqueous solution, one drachm to a pint.
A weak solution—as indicated—is used to avoid violent reaction, which would be liable to cause injury to the tissue.

„ . . . **Carbonate of Lithia.**
Aqueous solution, one drachm to a pint.

STAINING

The process by means of which the various elements of tissues are differentiated.

Stains.

(1) General, which affect all the elements of a tissue or preparation.

(2) Selective.

(*a*) Nuclear, which affect the nuclei of cells.

(*b*) Plasmatic, which affect all cell elements other than the nuclei.

(*c*) Specific, which affect some or one only of the elements of a tissue or preparation.

Dyes.

(1) Basic, *i.e.*, Salts with a colour base and a non-colour acid.

(2) Acid, *i.e.*, Salts with a colour acid and a non-colour base.

(3) Neutral, *i.e.*, Salts having both a colour base and a colour acid.

Tissue Elements according to their Reaction to Dyes.

(1) Basophilous, which display an affinity for a basic dye.

(2) Acidophilous, which display an affinity for an acid dye.

(3) Neutrophilous, which display an affinity for a neutral dye.

N.B.—(1) Basic Dyes are usually nuclear stains. Acid Dyes are usually plasmatic stains.

(2) The action of stains is modified by Fixatives and Mordaunts.

(3) A Mordaunt is a substance which has the power of combining with certain tissue elements, and with the colouring principles of stains forming insoluble compounds called lakes, thus enabling tissues or certain of their elements to be acted upon by stains which have no power of directly combining with them.

METHODS OF STAINING

(1) **Immersion**:—The prepared section being transferred to a watch glass or other suitable vessel containing the stain, and immersed in the fluid until the desired effect is produced.

(2) **Transfusion**:—Prepared tissues which are not capable of transference from one vessel to another (*e.g.*, teased out Neumann's sheaths) being stained after mounting by passing the colouring agent beneath the cover-slip. The stain is applied to one side of the slip, and excess drawn away from the opposite side by means of blotting paper.

TABLE B.—STAINS

CARMINE

Description . . An alum-lime salt of Carminic Acid obtained from Cochineal.
Occurs as a distinctive bright red powder.

Characters . . Nuclear and Plasmatic.

Use . . . . As an ingredient of Grenacher's Borax Carmine and Mayer's Carmalum *q.v.* Used chiefly for staining tissues in bulk. *Vide* Weil's process.

HÆMATOXYLENE

Description . . Colourless crystals obtained from Logwood.

Characters . . Nuclear and Plasmatic.

Use . . . . As an ingredient of Ehrlich's Acid Hæmatoxylene and Benda's Iron Hæmatoxylene, etc.
Both Hæmatoxylene and Carmine are plasmatic stains except when used with a mordaunt, when they are powerful nuclear stains. The mordaunts chiefly used are salts of Calcium found in tap water, Alum and Iron salts.

NIGROSIN

Description . . Basic and Acid Aniline Dye.

Characters . . Nuclear and Plasmatic.

Use . . . . Aqueous solution of various strengths. Nigrosin is a name given to a series of acid and basic salts. The acid salts are most frequently employed.

CONGO RED

Description . . Acid Aniline Dye.

Characters . . Plasmatic.

Use . . . . Aqueous solution approximately 5%. Weak acids strengthen the colour.

EOSINE

Description . . Acid Aniline Dye.

Characters . . Plasmatic.

Use . . . . Aqueous solution approximately 5%. Useful counter-stain after nuclear staining with Hæmatoxylene.

ORANGE

Description . . Acid Aniline Dye.
Characters . . Plasmatic.
Use . . . . Aqueous solution approximately 5%. An ingredient of Ehrlich-Biondi Mixture.

RUBIN

Description . . Acid Aniline Dye.
Characters . . Plasmatic.
Use . . . . Aqueous solution approximately 5%. (Rubin = Acid Fuchsin).

PICRIC ACID

Description . . Acid Aniline Dye.
Characters . . Plasmatic.
Use . . . . In dehydrating Alcohols. Useful counter-stain after nuclear staining with Carmine and Hæmatoxylene.

BISMARCK BROWN

Description . . Basic Aniline Dye.
Characters . . Nuclear.
Use . . . . Aqueous or alcoholic solutions. Also used for " intra vitam " staining.

FUCHSIN

Description . . Basic Aniline Dye.
Characters . . Nuclear.
Use . . . . Aqueous or alcoholic solutions. Used largely in Ziehl's Carbol Fuchsin.

GENTIAN VIOLET

Description . . Basic Aniline Dye.
Characters . . Nuclear.
Use . . . . In aqueous solutions of in aniline water.
Largely used for differentiating bacteria by Gram's method.

METHYL GREEN

Description . . Basic Aniline Dye.
Characters . . Nuclear.
Use . . . . Aqueous solutions with a little Acetic Acid.
Of great value for fresh unfixed tissues.

METHYLENE BLUE

Description . . Basic Aniline Dye.
Characters . . Stains nervous tissue, intercellular cement substance, lymph spaces, etc.
Specific for medullated nerves.
Use . . . . Aqueous solutions of various strengths, also in physiological salt solution for "intra vitam" staining (about 1 in 1,000).
Being an unstable stain, it must be fixed with Picrate of Ammonium or Molybdate of Ammonium.

GOLD CHLORIDE

Description . . Metallic Impregnation Stain.
Characters . . Specific for nervous tissue, nerve end organs and distribution of nerves.
Use . . . . By reduction from neutral aqueous solution (·5% to 1%) by various reagents as Formic Acid and Citric Acid.
Vide Underwood's and Mummery's methods.

Useful for demonstrating the organic elements in dentine and cementum.

OSMIC ACID

Description . . Metallic Impregnation Stain.

Characters . . Specific for the sheaths of medullated nerves.

Use . . . . Aqueous solution, 1%.
Used also for differentiating spaces, as interglobular spaces in dentine.

PERCHLORIDE OF IRON

Description . . Metallic Impregnation Stain.

Characters . . Specific for nerve endings and peripheral distribution of nerves.

Use . . . . Aqueous solution, usually the British Pharmacopœia Liquor.
By interaction with Tannic or Gallic Acids or Pyrogallol.
Vide Mummery's process.

SILVER NITRATE

Description . . Metallic Impregnation Stain.

Characters . . For intracellular substance. Has been used for the peripheral distribution of nerves.

Use . . . . Reduction from the solid form or from aqueous solutions, ·2% to 1% by the action of reagents or light.
Very weak solutions act as a general stain. Used extensively in Golgi's and Cajal's methods, *q.v.*

CLEARING

(Including Dealcoholisation)

Definition . . . The process by means of which the alcohol used in dehydration is removed from a tissue by some substance which,

(1) Facilitates the penetration of the tissue by the medium to be employed for imbedding or mounting.

(2) By reason of its possessing a high refractive index, renders the sections transparent by penetrating amongst its elements.

Agent . . . Oil of Bergamot.
Refractive Index 1·462.
Agent . . . Oil of Turpentine.
Refractive Index 1·473.
Agent . . . Xylol.
Refractive Index 1·497.
Agent . . . Cedar Oil (Thick).
Refractive Index 1·520.
Agent . . . Oil of Cloves.
Refractive Index 1·533.
Agent . . . Anilin Oil.
Refractive Index 1·580.
Agent . . . Oil of Cinnamon.
Refractive Index 1·619.

Greater transparency is obtained when the refractive index of the agent equals the refractive index of the tissue. Agents with lower refractive indices give less transparency but more detail. Agents with higher refractive indices give the reverse result. Most tissues after preparation have a refractive index slightly higher than Canada Balsam.

Refractive index of Canada Balsam = 1·538.

Refractive index of Crown Glass (cover slips) = 1·518.

N.B.—Oil of Cloves dissolves Celloidin, so should not be used for Celloidin sections. Oil of Bergamot is recommended for clearing sections imbedded in Celloidin.

IMBEDDING

Definition . . . The process by means of which the tissues are thoroughly saturated with some medium in such a manner that sections of the tissue may be cut without distortion or injury.

Medium . . . PARAFFIN.
Approximately equal parts of Hard Paraffin—melting point 60° C. and Soft Paraffin—melting point 45° C.

Use . . . . Fusion.
The tissue is saturated with the medium which is liquid whilst warm, and solid when cold.

Medium . . . CELLOIDIN.
A preparation of pure Pyroxylin, of various strengths; in solution of Alcohol and Methylated Ether.

Use . . . . Evaporation.
The tissue is saturated with the medium in solution, the menstruum allowed to evaporate or otherwise got rid of.

Medium . . . MUCILAGE OF GUM ACACIA, or
Aqueous solution of Dextrin of equal consistence as Mucilage of Gum Acacia.

Use . . . . Freezing.
The tissue is saturated with the medium which is frozen hard by means of an ether spray.

SECTIONING

The process by means of which tissues are cut in small suitably sized pieces, sufficiently thin, so as to make them available for microscopic examination.

Though sections may be cut by "free hand," a microtome is usually employed. There are many varieties of microtomes, and the reader is referred to the list of makers of these machines for their descriptions.

EXAMINATION AND PERMANENT MOUNTING MEDIA

Embrace all media in which an object may be examined and permanently mounted unless otherwise stated.

NORMAL SALINE SOLUTION

Description . . Aqueous Solution of Sodium Chloride, ·75%.
Not suitable for permanent mounting, but for examination of Enamel Prisms, Neumann's Sheaths, etc.

FARRANT'S SOLUTION
GLYCERINE JELLY

Description . . *Vide* Formulæ — The formula varies slightly as used by different investigators.
Suitable for sections mounted direct from water or any aqueous medium.

CANADA BALSAM

Description . . Solutions of various strengths in Xylol, Chloroform, Alcohol or Turpentine.
Previous to mounting, sections must be dehydrated and cleared with a few exceptions, *e.g.* Ground sections of teeth, demonstrating structures in the hard tissues, may be surface dried—by means of blotting paper—and mounted in thick balsam.

FORMULÆ AND SPECIAL PROCESSES

Fixatives

Flemming's Solution.

Solution of Chromic Acid 1%	15·0 cubic centimetres
Solution of Osmic Acid 2% ...	4·0 cubic centimetres
Glacial Acetic Acid	1·0 cubic centimetres

Specially recommended for simultaneous hardening and decalcification of fœtal jaws, to demonstrate the development of teeth.

Freeborn's Solution.

Bichromate of Potash	2·0 grammes
Sulphate of Soda	25·0 grammes
Solution of Formaldehyde 2%	100·0 cubic centimetres

As Müller's Fluid, but is more rapid in action. Both solutions possess great penetrating power, and do not cause shrinkage of cells or fibrous tissue.

Muller's Fluid.

Bichromate of Potash	2·5 grammes
Sulphate of Soda	1·0 gramme
Distilled Water	100·0 cubic centimetres

Suitable for fixing most of the soft dental tissues. Large quantities of the fluid should be used and must be changed on the 2nd, 4th, 7th and 14th days. The process usually takes 3 weeks.

Nitro-Chromic Acid Solution.

Chromic Acid	2·5 grammes
Nitric Acid	5·0 cubic centimetres
Distilled Water	500·0 cubic centimetres

As Flemming's Solution. Large quantities of fluid are used and changed at the end of 48 hours.

When the tissue is flexible it must be well washed in running water, and then neutralised by immersing in Solution of Bicarbonate of Soda, 1 drachm to 1 pint.

Weil's Process.

(*a*) Saturated Solution of Perchloride of Mercury, q.s.

(*b*) Alcohol, 30%, 50%, 70% aa. q.s.

(*c*) Alcohol, 90% } q.s.
Iodine, 2% }

(*d*) Absolute Alcohol.
(*e*) Grenacher's Borax Carmine Solution q.s.
(*f*) 1% Solution of Hydrochloric Acid in Alcohol 70% q.s.
(*g*) Alcohol, 90%.
(*h*) Alcohol absolute.
(*i*) Oil of Cloves.
(*j*) Xylol.
(*k*) Chloroform.
(1) Pieces of fresh teeth or whole teeth with widely opened apices are fixed and hardened in (*a*) for from 6 to 8 hours.
(2) Wash out with (*b*) for 24 hours with each strength, then with (*c*) for 24 hours.
(3) Place in (*d*) until white, and wash in running water.

The teeth are stained in bulk.

(4) Immerse in (*e*) for from 3 to 7 days.
(5) Fix stain in (*f*) for from 12 to 36 hours.
(6) Dehydrate, by immersing in (*g*) 15 minutes (*h*) 30 minutes.
(7) Clear by immersing in Oil of Cloves for 12 hours.
(8) Wash in (*j*).
(9) Immerse in (*k*) until saturated.

A thin chloroform solution of Canada Balsam is then prepared and the specimens transferred to this. Dry powdered balsam is added a little at a time, until the chloroform will take up no more.

Place the teeth in a water bath at 90° C for 2 or 3 days, *i.e.*, until the balsam when cool cracks on the introduction of a needle point.

The teeth are now ready for grinding down into sections.

Method of Grinding Down Hard Tissues

(1) Grind pieces of tooth (or a whole tooth) as thin as possible by means of a rough and a fine corundum wheel on a dental lathe; keeping the wheel constantly wet with cold water.

(2) Rub down these sections with powdered pumice stone and water between sheets of ground glass.
(3) Polish sections by rubbing carefully on an Arkansas stone.
(4) Wash well in distilled water.
(5) Surface dry the sections by means of blotting paper and mount in thick Canada Balsam.
(6) Or dehydrate them with alcohol. Clear in oil of cloves, and mount in thin balsam.

Decalcifying Agents

***Hopewell-Smith's Method.**

(*a*) Solution of Formaldehyde, 10% q.s.
(*b*) Flexile Collodion, q.s.
(*c*) Hydrochloric Acid, 10% 12 c.c.
(*d*) Nitric Acid, pure, 1·5 c.c.
(*e*) Nitric Acid, pure, 1·5 c.c.
(*f*) Solution of Bicarbonate of Soda, 5 grains to 1 oz. q.s.

* A modification recommended by the authors:—Mix together (*c*), (*d*), (*e*), adding to the solution 1% of Phloroglucin.
The tooth is then transferred to this solution after Step (*b*), and left until decalcified, Step (*f*) following.

A valuable method for the rapid decalcification of teeth, causing little or no distortion if carried out with care, and avoiding rapid changes of temperature.

Details of the Process

(1) Place a newly extracted washed tooth, of which the apex has been widely opened into (*a*) for 7 days.
(2) Wash and dry the tooth, and seal the widely opened apical foramen with (*b*).
(3) Transfer to (*c*) for 15 hours.
(4) Add (*d*) to (*c*) having previously removed the tooth. Replace the tooth in (*c*) + (*d*) when the temperature has dropped to the normal, for 30 hours.
(5) Add (*e*) to (*c*) + (*d*) taking precaution as above and leave tooth in (*c*) + (*d*) + (*e*) until sufficiently soft for sectioning.

(6) Transfer tooth to (*f*) for half an hour.

(7) Remove Collodion, wash well in distilled water.

Paul's Method.

(*a*) Phloroglucin ... ... 1 gramme
Nitric Acid, pure ... ... 10 cubic centimetres
Nitric Acid, 10% ... 100 cubic centimetres
Mix.

(*b*) Solution of Bicarbonate of Soda 5 grains to 1oz. q.s.

A valuable method for rapidly decalcifying enamel, and separating Nasmyth's membrane from a tooth, without injuring its cellular elements.

Phloroglucin has a protective function, and is not itself a solvent of calcific salts. It protects the organic elements of the membrane against the action of the mineral acid.

Details of the Process

(1) Place a recently erupted or unerupted washed tooth in (*a*) for a few minutes, or until the membrane shows signs of separating from the crown.

(2) Wash in distilled water.

(3) Transfer to (*b*) until bubbling ceases.

(4) Separate membrane from the tooth, and wash in distilled water for a few minutes.

(5) Stain, counter stain and mount.

Stains

Beckwith's Gold Stain.

Mummery's Modification.

(*a*) Solution of Chloride of Gold, 1%, q.s.

(*b*) Solution of Hydrate of Soda, 20% q.s.

(*c*) Solution of Carbonate of Potash, 10% q.s.

(*d*) Solution of Iodide of Potash, 10% q.s.

By means of this method of staining Mr. Mummery has been able to successfully demonstrate the presence of nerve fibrils penetrating the dentine arising from a marginal plexus on the dentine side of the odontoblast cells.

Details of the Process

(1) Place the sections in solution (*a*) for half-an-hour.
(2) Wash for a few moments in distilled water.
(3) Transfer to Solution (*b*) for three minutes.
(4) Transfer to Solution (*c*) for half-an-hour.
(5) Drain.
(6) Transfer to Solution (*d*) for from ten to fifteen minutes.
(7) Wash in distilled water.

Cajal's Silver Stain.

(*a*) Alcohol, 50%, to which is added a few drops of Liquid Ammonia, q.s.
(*b*) Alcohol Absolute, q.s.
(*c*) Solution of Nitrate of Silver, 1·5% q.s.
(*d*) Hydrokinone ... ... 1·5 grammes
Solution of Formaldehyde, 40% ... ... 5 cubic centimetres
Rectified Spirit ... ... 10 cubic centimetres
Distilled Water ... ... 100 cubic centimetres
Mix.

This method of staining is recommended by Mr. Mummery to demonstrate the peripheral distribution of the nerves of the dental pulp.

Details of the Process

(1) Place small pieces of decalcified tooth, not more than 4 mm. thick, in (*a*) for from four to six hours.
(2) Transfer to (*b*) for twenty-four hours.
(3) Wash in distilled water for a few minutes.
(4) Transfer to Solution (*c*) kept at a temperature of 37·5° C. for from five to six days.
(5) Transfer to Solution (*d*) for twenty-four hours.
(6) Wash in distilled water for a few minutes.
(7) Cut sections and mount.

Charters-White's Celloidin-Fuchsin.

(*a*) Absolute Alcohol, q.s.

(*b*) Ether, q.s.

(*c*) Absolute Alcohol ... ... 10 cubic centimetres
to which is added fuchsin until a dark port-wine colour is produced.
Ether ... ... 30 cubic centimetres
Celloidin, q.s., to make a thin syrupy Solution.

An excellent method of demonstrating internal cavities and spaces in bone and teeth.

Details of the Process

(1) Place ground sections, about 1/16in. in thickness, in (*a*) for five minutes.

(2) Transfer to (*b*) for five minutes.

(3) Transfer to (*c*) for seven days.

(4) Remove from (*c*), allow to dry by evaporation, and complete the process of grinding.

Delafield's Hæmatoxylene.

Hæmatoxylene ... ... 4 grammes
Absolute Alcohol ... ... 25 cubic centimetres
Saturated Solution of Ammonia Alum ... ... 400 cubic centimetres
Mix. Expose to light and air for 3 days, filter and add
Glycerine ... ... 100 cubic centimetres
Methylic Alcohol ... ... 100 cubic centimetres

This stain is recommended as being the most powerful and reliable of the hæmatoxylene formulæ.

It is preferable to dilute the solution with distilled water (1 part to 3 parts of water) immediately before use.

Hæmatoxylene solutions may be used both as a nuclear and plasmatic stain. If it is desired to stain nuclei only, the sections must be left in the stain for from 4 to 10 minutes (according to the strength of the Hæmatoxylene solution) and a mordaunt used to fix the stain. If employed as a plasmatic stain, the sections are immersed in it for from 12 to 24 hours, and no mordaunt is required.

Ehrlich's Acid Hæmatoxylene.

Hæmatoxylene	2 grammes
Glacial Acetic Acid	10 cubic centimetres
Glycerine	100 cubic centimetres
Absolute Alcohol	100 cubic centimetres
Distilled Water	100 cubic centimetres

Alum, in excess.

Mix, and allow to stand in the light until the solution becomes dark red in colour.

Recommended as the most useful nuclear stain for the dental tissues.

Diluted about 1 part to 3 parts of distilled water, an immersion of about 4 minutes is sufficient to stain nuclei. A mordaunt (tap-water) must be used to fix the stain.

See Delafield's Hæmatoxylene.

Ehrlich-Biondi Mixture.

Saturated Solution of Orange Acid Anilin	100 cubic centimetres
Saturated Solution of Rubin Acid Anilin	20 cubic centimetres
Saturated Solution of Methyl Green Basic Anilin ...	50 cubic centimetres

Mix little by little with constant shaking.

Recommended as a useful differential stain for developmental tissues.

Golgi's Silver Stain.

(*a*) Solution of Bichromate of Potash 2%	8 cubic centimetres
Solution of Osmic Acid 1% ...	2 cubic centimetres

Mix.

(*b*) Solution of Nitrate of Silver 5% ... ... q.s.

Recommended for staining axis cylinders of nerves, protoplasmic nerve cell processes, and the organic constituents of dentine and cementum.

Details of the Process

(1) Place fresh sections in (*a*) for from 3 to 4 days.

(2) Transfer to (*b*) for 24 hours.

Gram's Stain.

(*a*) Aniline Gentian Violet ... q.s.

(*b*) Iodine ... ... 1 gramme
Iodide of Potassium ... 2 grammes
Distilled Water ... ... 300 cubic centimetres

(*c*) Alcohol Absolute ... ... q.s.

A valuable differential stain for bacteria, and used largely in demonstrating their presence in caries of the dental tissues.

Details of the Process

(1) Immerse in (*a*) for from 1 to 4 minutes.

(2) Drain off excess of the stain.

(3) Immerse in (*b*) for 1 to 4 minutes.

(4) Wash off with (*c*) until all excess of stain is removed.

Grenacher's Borax Carmine.

Borax ... ... 4 grammes
Carmine ... ... 2·5 grammes
Distilled Water ... ... 100 cubic centimetres

Boil for 45 minutes, add an equal volume of Alcohol, 70%.

Set aside, decanter and filter.

Recommended for staining in bulk, and is an agent employed in Weil's process, *q.v.* This stain must be fixed by means of a dilute acid. The usual method for fixing is to transfer the preparations direct from the staining bath into alcohol 70%, acidulated with Hydrochloric Acid, approximately 5 drops of pure acid being added to 100 cubic centimetres of Alcohol.

Iron Hæmatoxylene (Benda).

(*a*) Sulphate of Iron ... ... 80 grammes
Distilled Water ... ... 40 cubic centimetres
Sulphuric Acid ... ... 15 cubic centimetres
Nitric Acid ... ... 18 cubic centimetres

Mix.

(*b*) Solution of Hæmatoxylene, 1% q.s.

(*c*) Solution of Acetic Acid, 10% q.s.

Useful as an alternative method to Iron and Tannin, *q.v.*

Details of the Process

(1) Place sections in (*a*) diluted 1 part to 2 parts of distilled water for 24 hours.
(2) Wash in distilled water.
(3) Wash in tap water.
(4) Transfer to (*b*) until black.
(5) Transfer to (*c*) until required differentiation is obtained.
(6) Wash in distilled water.

Iron and Tannin.

(*a*) Solution of Perchloride of Iron, 4%.

(*b*) Solution of Tannic Acid, 4%.

Recommended for staining decalcified sections of teeth, with the dental pulp " in situ " to demonstrate its nervous elements—the marginal plexus, and the neuro-fibrils running in the dentinal tubules.

Details of the Process

(1) Place the sections in (*a*) for twenty-four hours.
(2) Wash in distilled water.
(3) Transfer to (*b*) until black.
(4) Wash in distilled water.

Mayer's Carmalum.

Carmine	1 gramme
Alum (Potash)	10 grammes
Distilled Water	200 cubic centimetres

Dissolve, and filter, and add 1% of Salycylic Acid to preserve the solution.

See Grenacher's Borax Carmine.

Preparations of alum-carmine are said to have a destroying action on calcareous structures. Their use, therefore, in sections of dentine is contra-indicated.

Picro-Carmine Stain.

Miller's Method

(*a*) Solution of Carmine concentrated, q.s.

(*b*) Alcohol ... ... 70 parts
Hydrochloric Acid ... ... 1 part
Water ... ... 29 parts
Mix.

(*c*) Absolute Alcohol, q.s.
Coloured yellow by the addition of a sufficient quantity of Picric Acid.

Recommended for staining ground sections of a carious tooth, the bacteria present being stained light red, dentinal fibrils light red, dental matrix pink, and the decomposing parts yellow.

Details of the Process

(1) Immerse sections in (*a*) for 15 minutes.

(2) Transfer to (*b*) for from 15 minutes to 5 hours.

(3) Dehydrate in (*c*).

Underwood's Gold Chloride.

(*a*) Solution of Bicarbonate of Soda, 1% q.s.

(*b*) Neutral Solution of Chloride of Gold, 1% q.s.

(*c*) Solution of Formic Acid, 1% q.s.

A valuable stain.

Recommended for differentiating the course of nerve fibres, and the organic constituents of dentine and cementum.

Details of the Process

(1) Place decalcified sections of a tooth in (*a*) for 2 minutes.

(2) Transfer to (*b*) for 45 minutes.

(3) Wash in distilled water.

(4) Transfer to (*c*) in a water bath, at a temperature not exceeding 60° C for 1 hour, or until the sections become crimson.

(5) Wash in distilled water for 1 hour.

N.B.—(2), (3), (4) must be carried out in the dark.

Ziehl's Carbol-Fuchsin.

Fuchsin	1 gramme
Pure Carbolic Acid	5 grammes
Alcohol	10 grammes
Distilled Water	100 cubic centimetres

Used to stain bacteria present in caries of the dental tissues.

Imbedding

Celloidin.

(*a*) Absolute Alcohol ... ... q.s.

(*b*) Absolute Alcohol ... ... 50 cubic centimetres
Ether ... ... 150 cubic centimetres
Mix.

(*c*) Solution (*b*) q.s. and add Celloidin, q.s. to make a liquid of a thin syrupy consistence.

(*d*) Solution (*b*) q.s. and add Celloidin, q.s. to make a liquid of a thick syrupy consistence.

(*e*) Chloroform.

Recommended for its equal uniformity of permeation and penetrative power, and for use for imbedding developmental, and other fragile tissues.

Details of the Process

(1) Place the preparation in (*a*) for 24 hours.

(2) Transfer to (*b*) for 24 hours.

(3) Transfer to (*c*) for 7 days (approx.)

(4) Transfer to (*d*) for 4 days (approx.)

(5) Imbed the preparation in a fresh quantity of (*d*), allow to evaporate for a few moments, and complete hardening of the celloidin block by immersing in (*e*) for from 24 to 48 hours.

N.B.—Celloidin sections may be stained "en masse" before (5) (clearing with Oil of Bergamot) or after sectioning.

Mucilage of Acacia.

Gum Acacia, small picked pieces ...	4 ounces
Distilled Water	6 fluid ounces

Allow to stand in a suitable covered vessel, stir frequently until solution is effected. Strain through muslin and add

Liquid Carbolic Acid ... ... 10 drops

The most extensively used imbedding medium for the dental tissues.

The prepared specimen is transferred to a suitable vessel containing a sufficiency of the Mucilage. The impregnation of the specimen is indicated by its sinking to the bottom of the vessel.

Sections are cut on an Ether freezing microtome.

Solution of Dextrine.

Dextrine ... ... q.s.

Solution of Carbolic Acid, 1 in 40 6 fluid ounces

The dextrine to be added to the solution until a thtck liquid of the consistence of Mucilage is obtained.

Used by many investigators in place of Mucilage of Acacia.

Paraffin.

(*a*) Absolute Alcohol, q.s.

(*b*) Chloroform, q.s.

(*c*) Hard Paraffin, melting point 45° to 50°C., q.s.

An essential method for the preparation of serial sections.

Details of the Process

(1) After preparation of the tissue it is dehydrated in (*a*) for 24 hours.

(2) Place in (*b*) until saturated.

(3) Transfer to successive baths of melted (*c*) until thoroughly impregnated, and all (*b*) is removed.

(4) Allow the Paraffin containing the specimen to cool and trim into suitably sized rectangular block for the Cambridge rocking microtome on which sections are cut.

The further manipulation of sections is carried out on the slides, on to which sections are floated from warm water. The slides are smeared with egg albumen, to facilitate and ensure attachment of the sections.

Dry the slides with blotting paper and immerse in Xylol, to remove all Paraffin.

Transfer to Alcohol absolute. 70%, 50%, 30%.

Stain, dehydrate, clear and mount in balsam.

Examination and Mounting Media

Farrant's Medium.

Picked Gum Arabic
Glycerine
Saturated Aqueous Solution of Arsenious Acid } equal parts of each.
Water.

Mix.

Used to mount sections direct from aqueous media.

Not to be used for sections stained by any of the aniline dyes.

Glycerine Jelly.

French Gelatine	...	...	...	1 ounce
Glycerine	...	...	...	4 ounces
Chloroform Water	...	...	...	6 ounces

Soak the gelatine until soft in a portion of the Chloroform Water, add the glycerine and heat gently until solution is effected. Stir in the remainder of the water.

For sections mounted direct from aqueous media.

It is necessary to slightly warm the medium, the slide, and cover-slip.

METHODS OF DEMONSTRATING THE HISTOLOGICAL STRUCTURE OF THE DENTAL TISSUES

ABSORBENT ORGAN

(*a*) Detached

Preparation . . . Wash in salt solution (*a*), fix in Müller's fluid for 7 days, and harden in alcohol for 14 days, or (*b*) fix and harden in solution of formaldehyde 10% for 7 days.

Agents employed for

(*a*) **Imbedding** . . Celloidin.
Paraffin.

(*b*) **Staining** . . Ehrlich's Acid Hæmatoxylene.
Counterstain Eosine.

(*c*) **Mounting** . . Canada Balsam.

(*b*) *In Sitû*

Preparation . . . (*a*) Weil's process.
(*b*) Authors' modification of Hopewell-Smith's process.

Agents employed for

(*a*) **Imbedding** . . Mucilage of Acacia or solution of Dextrine.

(*b*) **Staining** . . Ehrlich's Acid Hæmatoxylene.
Counterstain Eosine.

(*c*) **Mounting** . . Canada Balsam.

BONE, ALVEOLAR

(*a*) With tooth and soft tissues *in sitû*.

Preparation . . . (*a*) Hopewell-Smith's process, or authors' modification.

Agents employed for

(*a*) **Imbedding** . . Mucilage of Acacia or solution of Dextrine.

(*b*) **Staining** . . Fuchsin or Ehrlich's Acid Hæmatoxylene.
Counterstain Eosine.

(*c*) **Mounting** . . Canada Balsam.

(*b*) Detached from soft tissues

Preparation . . . Grinding down.

Agents employed for

(*a*) **Imbedding** . . Nil.

(*b*) **Staining** . . Charters White's Celloidin-Fuchsin.

(*c*) **Mounting** . . Canada Balsam.

CARIES OF

(*a*) Nasmyth's Membrane

Preparation . . . Paul's method.

Agents employed for

(*b*) **Staining** . . Carbol Fuchsin or Gram's Stain.

(*c*) **Mounting** . . Canada Balsam.

(*b*) Enamel

Preparation . . . Immerse a recently extracted carious tooth in solution of Formaldehyde 2% for 2 days, complete by the grinding down process.

Agents employed for

(*a*) **Imbedding** . . Nil.

(*b*) **Staining** . . No stain essential, but Carbol Fuchsin or Picro-Carmine or Gram's Stain may be used.

(*c*) **Mounting** . . Canada Balsam.

(*c*) Dentine

Preparation . . . (*a*) Remove a piece of softened carious dentine from a tooth by means of an excavator.

Agents employed for

(*a*) **Imbedding** . . Mucilage of Acacia or solution of Dextrine.

(*b*) **Staining** . . Carbol Fuchsin or Gram's Stain.

(*c*) **Mounting** . . Canada Balsam.

or

Preparation . . . (*b*) Grinding down.

Agents employed for

(*a*) **Imbedding** . . Nil.

(*b*) **Staining** . . Picro-Carmine, or Carbol Fuchsin, or Gram's Stain.

(*c*) **Mounting** . . Canada Balsam.

or

Preparation . . . (*c*) Weil's process.

(*d*) Cementum

Preparation . . . Decalcify by immersion a tooth in Solution of Hydrochloric Acid 10% for several days, or until sufficiently softened—neutralise.

Agents employed for

(*a*) **Imbedding** . . Mucilage of Acacia or solution of Dextrine.

(*b*) **Staining** . . Carbol Fuchsin or Gram's Stain.

(*c*) **Mounting** . . Canada Balsam.

CEMENTUM

Preparation . . . (*a*) Grinding down.

Agents employed for

(*a*) **Imbedding** . . Nil.

(*b*) **Staining** . . Charters White's Celloidin-Fuchsin or Golgi's Stain.

(*c*) **Mounting** . . Canada Balsam.

or

Preparation . . . (*b*) Decalcification with Chromic Acid in combination with Hydrochloric Acid 1% and subsequent neutralisation with solution of Bicarbonate of Soda.

Agents employed for
(*a*) **Imbedding** . . Mucilage of Acacia or solution of Dextrine.
(*b*) **Staining** . . Underwood's Gold Chloride or Iron and Tannin.
(*c*) **Mounting** . . Farrant's Medium.

DENTINE

Preparation . . . (*a*) Grinding down.
Agents employed for
(*a*) **Imbedding** . . Nil.
(*b*) **Staining** . . Charters White's Celloidin-Fuchsin or Golgi's Stain.
(*c*) **Mounting** . . Canada Balsam.

or

Preparation . . . (*b*) Hopewell-Smith's Method.

or

Preparation . . . (*c*) Decalcification with Chromic Acid in combination with Hydrochloric Acid 1% and subsequent neutralisation with solution of Bicarbonate of Soda.

Agents employed for
(*a*) **Imbedding** . . Mucilage of Acacia or solution of Dextrine.
(*b*) **Staining** . . Ehrlich's Acid Hæmatoxylene or Underwood's Gold Chloride or Mummery's Gold Chloride or Cajal's Silver or Iron and Tannin.
(*c*) **Mounting** . . Canada Balsam, or Farrant's Medium.

or

Preparation . . . Weil's process.

DEVELOPMENTAL TISSUES.

(Soft)

Preparation . . . (*a*) Fix in Müller's Fluid, harden in Alcohol.

Agents employed for

(*a*) **Imbedding** . . Mucilage of Acacia.
(*b*) **Staining** . . Ehrlich-Biondi Mixture.
(*c*) **Mounting** . . Canada Balsam.

or

Preparation . . . (*b*) Fix and harden in Formaldehyde Solution 10%.

Agents employed for

(*a*) **Imbedding** . . Mucilage of Acacia.
(*b*) **Staining** . . Ehrlich-Biondi Mixture.
(*c*) **Mounting** . . Canada Balsam.

or

Preparation . . . (*c*) Fix and harden in Freeborn's Solution.

Agents employed for

(*a*) **Imbedding** . . Mucilage of Acacia, Celloidin, or Paraffin.
(*b*) **Staining** . . Ehrlich-Biondi Mixture.
(*c*) **Mounting** . . Canada Balsam.

or

Preparation . . . (*d*) Fix and harden in Solution of Perchloride of Mercury and Alcohol.

Agents employed for

(*a*) **Imbedding** . . Mucilage of Acacia, Celloidin, or Paraffin.
(*b*) **Staining** . . Borax Carmine in bulk.
(*c*) **Mounting** . . Canada Balsam.

Ditto (Hard and Soft)

Preparation . . . (*a*) Fix, harden and decalcify in (1) Nitro-Chromic Acid Solution

Agents employed for

(*a*) **Imbedding** . . Mucilage of Acacia.
(*b*) **Staining** . . Ehrlich-Biondi Mixture.
(*c*) **Mounting** . . Canada Balsam.

or

Preparation . . . (2) Flemming's Solution for 24 hours, followed by 24 hours in several strengths of Alcohol, 70%, 80%, 90%.

Agents employed for

(*a*) **Imbedding** . . Mucilage of Acacia.

(*b*) **Staining** . . Ehrlich-Biondi Mixture.

(*c*) **Mounting** . . Canada Balsam.

or

Preparation . . . (b) Fix and harden in Solution of Perchloride of Mercury and Alcohol.
Decalcify in Solution of Hydrochloric Acid, 10%.

Agents employed for

(*a*) **Imbedding** . . Paraffin.

(*b*) **Staining** . . Ehrlich-Biondi Mixture or Borax Carmine in bulk.

(*c*) **Mounting** . . Canada Balsam.

ENAMEL

Preparation . . . (*a*) Grinding down.

Agents employed for

(*a*) **Imbedding** . . Nil.

(*b*) **Staining** . . Nil.

(*c*) **Mounting** . . Canada Balsam.

Preparation . . . (*b*) Grinding down and immersion of one side only of the section in Solution of Hydrochloric Acid for a few minutes, and neutralisation with weak Solution of Ammonia. (To protect the second surface of the section from the action of the acid smear over with vaseline).

Agents employed for

(*a*) **Imbedding** . . Nil.

(*b*) **Staining** . . Nil or Charters White's Celloidin Fuchsin.

(*c*) **Mounting** . . Canada Balsam.

ENAMEL PRISMS

Preparation . . . Immerse a tooth in 12 c.c.'s Solution of Hydrochloric Acid, 10%, for 30 hours.
Remove from the acid solution, neutralise with solution of Bicarbonate of Soda, and wash.
Place a small portion of softened enamel on a clean slide, and tease out the prisms.

Agents employed for

(*a*) **Imbedding** . . Nil.

(*b*) **Staining** . . Rubin by transfusion and washing away excess with Acetic Acid, 10%.

(*c*) **Mounting** . . Normal Saline Solution.

FOLLICLE, DENTAL

(*a*) *In Sitû.*

Preparation . . . *Vide* Developmental Tissues.
(*b*) Detached from around developing permanent tooth.

Preparation . . . Solution of Formaldehyde, 10%, for 7 days.

Agents employed for

(*a*) **Imbedding** . . Mucilage of Acacia.

(*b*) **Staining** . . Ehrlich's Acid Hæmatoxylene or Delafield's Hæmatoxylene.

(*c*) **Mounting** . . Canada Balsam.

GUBERNACULUM

Preparation . . . *Vide* Follicle.

GUM

(*a*) Detached.

Preparation . . . Fix and harden in
(*a*) Solution of Formaldehyde, 10%, about 7 days.

Agents employed for

(*a*) **Imbedding** . . Mucilage of Acacia or solution of Dextrine.

(*b*) **Staining** . . Erhlich's Acid Hæmatoxylene or Delafield's Hæmatoxylene and Counterstain Eosine.

(*c*) **Mounting** . . Canada Balsam.

or in

Preparation . . . (*b*) Müller's Fluid.

Agents employed for

(*a*) **Imbedding** . . Mucilage of Acacia or solution of Dextrine.

(*b*) **Staining** . . Erhlich's Acid Hæmatoxylene or Delafield's Hæmatoxylene and Counterstain Eosine.

(*c*) **Mounting** . . Canada Balsam.

(*b*) *In Sitû*

Preparation . . . (*a*) Hopewell-Smith's Process.

Agents employed for

(*a*) **Imbedding** . . Mucilage of Acacia or solution of Dextrine.

(*b*) **Staining** . . Erhlich's Acid Hæmatoxylene or Delafield's Hæmatoxylene and Counterstain Eosine.

(*c*) **Mounting** . . Canada Balsam.

or

Preparation . . . (*b*) Authors' Modification of Hopewell-Smith's Process.

(*a*) **Imbedding** . . Mucilage of Acacia or Solution of Dextrine.

(*b*) **Staining** . . Erhlich's Acid Hæmatoxylene or Delafield's Hæmatoxylene and Counterstain Eosine.

(*c*) **Mounting** . . Canada Balsam.

JAW, FŒTAL

Preparation . . . *Vide* Developmental Tissues.

JAW, ADULT

Preparation . . . *Vide* Bone.
Solution of Chromic Acid 5% in combination with Solution of Hydrochloric Acid 1%.
Wash and neutralise when soft.

Agents employed for

(*a*) **Imbedding** . . *Vide* Bone.

(*b*) **Staining** . . *Vide* Bone.

(*c*) **Mounting** . . Canada Balsam.

NASMYTH'S MEMBRANE

Preparation . . . (*a*) Paul's Method.

Agents employed for

(*a*) **Imbedding** . . Nil.

(*b*) **Staining** . . Ehrlich's Acid Hæmatoxylene and Counterstain Eosine.

(*c*) **Mounting** . . Canada Balsam.

Preparation . . . (*b*) Separate Membrane by immersing a newly erupted and recently extracted tooth in 10% solution of Hydrochloric Acid for $2\frac{1}{2}$ hours.
Neutralise in solution of Bicarbonate of Soda and wash in distilled water.

Agents employed for

(*a*) **Imbedding** . . Nil.

(*b*) **Staining** . . Ehrlich's Acid Hæmatoxylene and Counterstain Eosine.

(*c*) **Mounting** . . Canada Balsam.

NERVES OF THE DENTAL PULP

Preparation . . . Harden a removed pulp in solution of Osmic Acid 1% for 24 hours in the dark.
Wash in distilled water.
Vide Pulp *in sitû*.

Agents employed for
(*a*) **Imbedding** . . Mucilage of Acacia or solution of Dextrine.
(*b*) **Staining** . . Osmic Acid stains the medullated nerve bundles.
(*c*) **Mounting** . . Farrant's Medium or Canada Balsam.

NEUMANN'S SHEATHS

(*a*) Detached.

Preparation . . . Place broken pieces of tooth in 12 c.c.'s of solution of Hydrochloric Acid, 10%, for 3 days.
Remove and repeat with a fresh solution of the same strength for 2 days, and then add 5 c.c.'s of Nitric Acid, and leave until the sheaths settle to the bottom of the container as a mucoid deposit. Tease out the sheaths on a slide.

Agents employed for
(*a*) **Imbedding** . . Nil.
(*b*) **Staining** . . Borax Carmine or Nigrosin by transfusion, washing away excess with 1% Acetic Acid.
(*c*) **Mounting** . . Normal Saline Solution.

(*b*) *In Sitû*

Preparation . . . Weil's Process.

Agents employed for
(*a*) **Imbedding** . . Nil.
(*b*) **Staining** . . Golgi's Stain or Nigrosin.
(*c*) **Mounting** . . Canada Balsam.

PERIODONTAL MEMBRANE

(*a*) Detached.

Preparation . . . Solution of Formaldehyde 10% for 7 days.

Agents employed for

(*a*) **Imbedding** . . Mucilage of Acacia or solution of Dextrine.

(*b*) **Staining** . . Ehrlich's Acid Hæmatoxylene and Counterstain Eosine.

(*c*) **Mounting** . . Canada Balsam.

(*b*) *In Sitû*

Preparation . . . Hopewell - Smith's Process or authors' Modification.

Agents employed for

(*a*) **Imbedding** . . Mucilage of Acacia or solution of Dextrine.

(*b*) **Staining** . . Ehrlich's Acid Hæmatoxylene and Counterstain Eosine.

(*c*) **Mounting** . . Canada Balsam.

(*c*) Chronic Abscess of, *in sitû*

Preparation . . . (As *b*).

Agents employed for

(*a*) **Imbedding** . . (As *b*).

(*b*) **Staining** . . (As *b*).

PULP, DENTAL

(*a*) Detached.

Preparation . . . (*a*) Solution of Formaldehyde, 10%, for 7 days.

Agents employed for

(*a*) **Imbedding** . . Mucilage of Acacia or solution of Dextrine.

(*b*) **Staining** . . Delafield's Hæmatoxylene and Counterstain Eosine.

(*c*) **Mounting** . . Canada Balsam.

or

Preparation . . . (*b*) Solution of Osmic Acid, 1%, for 24 hours in the dark.

Agents employed for
(*a*) **Imbedding** . . Mucilage of Acacia or Solution of Dextrine.
(*b*) **Staining** . . Delafield's Hæmatoxylene and Counterstain Eosine.
(*c*) **Mounting** . . Farrant's Medium.

(*b*) *In Sitû*

Preparation . . . Weil's Process.
Agents employed for
(*b*) **Staining** . . Metallic Impregnation Stains as below.
(*c*) **Mounting** . . Canada Balsam.

(*b*) *In Sitû*

Preparation . . . Hopewell-Smith's process or authors' modification.

Agents employed for
(*a*) **Imbedding** . . Mucilage of Acacia or Solution of Dextrine.
(*b*) **Staining** . . Ehrlich's Acid Hæmatoxylene and Counterstain Eosine, or Iron and Tannic Acid, or Underwood's Gold Stain, or Mummery's Gold Stain, or Iron Hæmatoxylene Benda, or Cajal's Silver Stain.
(*c*) **Mounting** . . Canada Balsam or Farrant's Medium.

N.B.—In all cases where Canada Balsam is used for mounting, sections should be always dehydrated and cleared.

PART V

GLOSSARY

OF TERMS USED IN THIS HANDBOOK

GLOSSARY

OF TERMS USED IN THIS HANDBOOK

Abrasion.—An injury in which tooth substance is worn away by means of a foreign body.

Abscess.—A more or less circumscribed accumulation of pus, contained in a cavity which is formed by the disintegration and distension of the tissues due to the suppurative process.

Acicular.—Needle-shaped.

Acromegaly.—A disease, characterised by a chronic, symmetrical enlargement of the bones, and soft parts of the extremities, and of the lower jaw, lips, and tongue.

Actinomycosis.—An infectious disease due to the presence of the Ray Fungus (Streptothrix Actinomyces).

Alkaloid.—A nitrogenous principle, of alkaline reaction, and basic properties, occurring in vegetable tissues or juices.

Amorphous.—Non-crystalline, exhibiting no fixed or definite shape.

Anhydrous.—Free of water.

Artefact.—A change produced in a tissue by manipulation.

Arthritis.—An acute or chronic inflammation of a joint.

Attrition.—A wearing away of tooth substances by an opposing tooth or teeth.

Bromism.—A series of symptoms produced by the administration of bromides.

Cachet.—A rice paper container used for the administration of drugs in powder form.

Cachexia.—A profound state of constitutional derangement due to the action of a disease or poison, which seriously interferes with metabolism.

Calcination.—The subjecting of a substance to the action of fire, to deprive it of moisture and of volatile and combustible constituents.

Calculus.— A morbid concretion, of a hard or stony consistence.

Caries.—Destruction of tooth substances, due to the action of acid forming, and peptonising bacteria.

Cellulitis.—Inflammation of the loose subcutaneous connective tissue and fascia.

Chromatin.—The network pervading the substance of cell nuclei, and so called because readily and deeply coloured by stains.

Coalescent.—Adhering together in one body or mass.

Collapse.—A condition of lowered vitality resulting from a fall in blood pressure, due to escape of blood from the vessels.

Concussion.—The disturbance effected in a part, by the mere shock of a blow or other injury, apart from any lesion discoverable by inspection.

Corrosive.—That which has the property of destroying by eating away gradually, usually by means of chemical interaction.

Cyst.—An abnormal growth, consisting of a cavity closed in on all sides by a definite wall, and containing a fluid or semi-fluid substance.

Deliquescent.—Having the property of absorbing moisture from the air and gradually assuming the liquid state.

Depletion.—The act or process of diminishing the quantity of blood in the vessels.

Detergent.—Cleansing.

Diathesis.—A condition of the system which renders it particularly liable to certain diseases.

Dyspepsia.—Impairment of digestion due to functional derangement of the stomach or intestines.

Efflorescent. — Liable to spontaneous loss of water of crystallisation, and so becoming covered with, or converted into, a whitish powder.

Elutriation.—The process of separating the light and heavy particles of a mixed insoluble powder by agitation with water, and subsequent decantation of the supervalent liquid from the heavier particles.

Empyæma.—An accumulation of pus in a natural cavity of the body.

Empyreumatic.—Having the smell of slightly burnt animal or vegetable substances.

Emulsion.—A more or less thick liquid, having fine particles of the active ingredient suspended in it, either by mechanical or chemical means.

Erosion.—A gradual destruction of tooth substance caused by chemical and mechanical agencies.

Etiology.—The causation of a disease.

Exanthemata.—A febrile disease attended with a distinctive eruption on the skin that takes a definite time to develop and run its course.

Excipient.—An ingredient of a formula which is responsible for the consistence of the finished product.

Fistula.—An abnormal suppurating canal, lined with a smooth membrance, and having an opening at both ends.

Fluorescence.—A peculiar blue appearance caused by the conversion of invisible rays of light into visible rays.

Gangrene.—Death of a part "en masse." Applied particularly to soft tissues.

Gingivitis.—Inflammation of the gums.

Glossitis.—Inflammation of the tongue.

Glucoside.—A substance decomposed by weak mineral acids into glucose and another substance; glucosides are acid or neutral principles found in vegetable tissues.

Hæmophilia.—Constitutional tendency to hæmorrhage.

Hæmorrhage.—Bleeding. An escape of blood from the vessels.

Hydragogue.—Having the property of absorbing water from the circulatory fluids.

Hydrolysis.—Chemical decomposition in which a substance splits up, after taking up one or more molecules of water.

Hygroscopic.—Having the property of absorbing moisture from the atmosphere.

Hyperæmia.—Excess of blood in a part, either due to increased inflow or obstructed outflow.

Hyperplasia.—Increase in size or mass of a part, by the development in it of new tissue.

Hypersensitive.—Marked by a condition of excessive sensibility.

Hypertrophy.—Increase in size or mass of a part, by the overgrowth or increase in number of the component elements of the part.

Hysteria.—A nervous disorder occurring in paroxysms, and simulating other diseases.

Idiosyncrasy.—A peculiarity which renders a person specially liable to, or specially resistant against, the action of a particular disease, drug, or other circumstance affecting him.

Indolent.—Having but little tendency to advance or recede.

Inflammation.—A series of changes which takes place in a living tissue when it is injured—provided that the injury is not of such a degree as to at once destroy its vitality or structure—and is the local attempt at repair of actual or referred injury.

Inhibition.—Restraint put upon the action of an organ through the agency of the nervous system.

Iodism.—A series of symptoms produced by the application or administration of Iodine and Iodides.

Ionic Medication (Iontophoresis).—The introduction into the tissues of a substance by means of electricity. The dissociated nascent particles of its elements are known as ions.

Irrigation.—The act of washing out a cavity by a stream of water, or a medicament in solution.

Isomeric.—Having the same elements in the same proportions, but different properties.

Isotonic.—Having the same specific gravity.

Leukoplakia.—A formation on the buccal mucous membrane, more particularly the tongue, of hyperæmic areas, which subsequently become covered by bluish-white patches of thickened epithelium.

Maceration.—The act of softening, disintegrating, or dissolving the whole or part of a substance by soaking it in a fluid.

Materia Medica.—The science which treats of drugs, their source, physical and chemical characteristics.

Maturation.—The state of ripening, of an inflammatory swelling, the formation of pus.

Migraine.—A paroxysmal nervous disorder associated with severe headache, frequently commencing with visual disturbances and terminating with sensory disturbances, nausea and vomiting.

Monoclinic.—Crystals having three axes, which may be all unequal; two of these are placed at right angles, the third being so inclined, as to be oblique to one and perpendicular to the other.

Nascent.—Beginning to exist. Of an element which, having been just freed from chemical combination, exerts an unusually energetic chemical action.

Necrosis.—Death of a part "en masse." Applied particularly to bone.

Neuralgia.—Pain in the course or distribution of a nerve, and named according to the part occupied.

Obtundent.—An agent which deadens excessive sensibility.

Odontalgia.—Pain in a tooth, which may be either local or referred.

Percolation.—The process of exhausting a powdered drug by passing a fluid through it.

Periodontitis.—Inflammation of the "membrane," which intervenes between the external surface of the root of a tooth, and its bony socket.

Peripheral; of nerves, relating to their ultimate distribution..

Pharmacology is the Science that treats of the action of drugs upon the tissues, organs and functions of the body.

Polymer.—A substance composed of the same elements, but in multiple proportions, and having different properties.

Polypus.—A smooth pedunculated growth, arising from the mucous or sub-mucous tissue.

N.B.—Polypus of the pulp or gum are more correctly described as hyperplasia, and hypertrophy respectively.

Prophylaxis.—Definite treatment with a view to the prevention of disease.

Ptyalism.—Excessive secretion of the salivary glands.

Pulpitis.—Inflammation of the dental pulp, *i.e.*, the internal vascular soft tissue of the tooth popularly known as the nerve.

Purpura.—A disease in which hæmorrhagic patches form upon the skin or mucous membranes.

Pyorrhœa Alveolaris.—Discharge of pus from the tooth socket. This term is loosely applied to the series of symptoms and conditions associated with Chronic General Periodontitis.

Refractive Index.—When ray of light passes from air through a substance it is deviated from its course. The ratio between the sine of the angle made by the entering ray and the surface of the substance, and the sine of the angle made by the deviated ray and the surface of the substance is the refractive index.

Resolution.—A process of complete recovery.

Rheumatoid Arthritis.—A chronic articular rheumatism.

Rhinitis.—Inflammation of the mucous membrane of the nasal fossæ.

Rickets.—An affection characterised by retarded ossification, over-production of cartilage in and about the bones, and general thickening of membranes.

Salivation.—Excessive secretion of the salivary glands.

Sepsis.—A general term indicating that a part has become infected with pus-forming bacteria.

Shock.—A condition of lowered vitality resulting from a fall in blood pressure, due to exhaustion of the vaso-motor centre by the severity, number, or duration of different impulses reaching it from the area of injury.

Stearoptene.—The solid constituent of a volatile oil.

Stomatitis.—Inflammation of the buccal mucous membrane.

Sublimation.—The act of refining by bringing a solid substance to a state of vapour and condensing it.

Suppuration.—The process of forming or discharging pus.

Syncope.—A state of lowered vitality, resulting from a fall in blood pressure, due to the failure of the heart's action.

Synthesis.—The building up of a chemical compound from its constituents.

Tartar.—A mass of organic and inorganic matter deposited on the teeth.

Therapeutics.—The science which deals with the treatment of pathological conditions by means of drugs and remedies.

Thrombosis.—Intravascular coagulation in any part of the circulatory system.

Traumatic.—Produced by injury.

Vesicant.—A blistering agent.

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